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MODELING CUSTOMER BEHAVIOR IN MULTICHANNEL SERVICE DISTRIBUTION: A RATIONAL APPROACH

DICK HEINHUIS

MODELING CUSTOMER BEHAVIOR IN MULTICHANNEL SERVICE DISTRIBUTION: A RATIONAL APPROACH

ACADEMISCH PROEFSCHRIFT

ter verkrijging van de graad van doctor aan de Universiteit van Amsterdam
op gezag van de Rector Magnificus prof. dr. D.C. van den Boom
ten overstaan van een door het college voor promoties ingestelde commissie,
in het openbaar te verdedigen in de Aula der Universiteit
op woensdag 16 oktober 2013, te 13.00 uur
door

Dick Heinhuis

geboren te Hilversum

...new information technologies are transforming the way we produce, consume, manage, live, and die...

Manuel Castells
1989

When we strip away the shiny new products and services which are available to us in ever increasing quantities, much about the world has not changed.

Christopher May
2002

PREFACE

In the years that I have been working on this thesis (officially from February 2007 till February 2013) once in a while I have let my thoughts wander off to writing the preface. When the moment finally has come, it is not as easy as one would expect. Although there are many textbooks on how to write a dissertation and these publications take you all the way from research design to conclusions, none of these publications (e.g. Riley et al., 2000; Verschuren and Doorewaard, 2005; Gilett et al., 2009; Murray and Beglar, 2009; Deane, 2010) write anything about writing the preface. Here the academic is on his/her own.

I have thought about alternative sources. Of help have been the prefaces of other dissertations, that offer an insight in what one might expect in a preface. Therefore I have analyzed a number of dissertations defended at Dutch universities by either friends, colleagues or for this topic relevant dissertations (Carpay, 1997, Molenaar, 1997; Jansen, 2002; De Vries, 2003; Broekhuizen, 2006; Farag, 2006; Simons, 2006; Vroomen, 2006; Nevejan, 2007, Teerling, 2007; Van Noort, 2008; Pieterson, 2009; Heerink, 2010; Arnoldus, 2011; Dormans, 2012). Analyzing the prefaces has led to the following format for a preface: use a metaphor, thank many (work related) people, extol the supervisor and the co-supervisor, tell a 'funny' story, thank family and friends and finally make some wise statements (like in the Heineken commercial when a politician needs an end for his speech to students and comparable to "Ich bin ein Berliner", comes up with "Biertje?").

Metaphor

How to describe the writing of a dissertation. Shall I compare it to a journey (De Vries, 2003; Dormans, 2012), the training of a marathon (Moolenaar, 1997) or shall I compare it to a summer's day (Shakespeare, 1609)? For me it has been a combination of all three aspects. A journey in which you have an idea of your final destination, but do not know what you will encounter along the way and once and a while have to remind yourself that you have to enjoy the journey as much as reaching the final destination. Training for a marathon, as indeed you need some endurance to continue working on it every possible moment. A summer's day because, although summer days are lovely, I really enjoy the autumn so it is always good to know the summer days will eventually end. The same is true for this dissertation: I derived great pleasure from writing it, but always knowing (and in advance enjoying) a new period will be following it. That period has now arrived.

Thanks (work related)

Thanks to Marjan Freriks, Alfred Peerboom, Frits Bloembergen, Willem Brouwer, Bert Rengelink, Reza Esmaili and especially Kees Rijsenbrij for giving me the opportunity to work on this thesis for so many years, sponsored by the Hogeschool van Amsterdam (it also shows how many managers I had in those six years ....). Thanks to Hans van Galen, Ferry Rietveld, Ronald Kleijn, Jan Derriks, Annemarie Lankveld, Wilko Oskam, Merijn van der Laag, Nora Kouwenhoven, Jan Hellings, Elsbeth Offerman, Jose Gruters, Jorien Scholze, Henk Stoffels, Nynke de Vries, Thys ten Veldhuis, Sander Terstegen, Marcel Veldhuizen, Rik Smit, Said El Houhidi and Pieter Eissens for helping me with my thesis in many different ways.

Thanks (co)supervisor

Thanks to prof. dr. ir. Rik Maes and dr. Erik J. de Vries for supporting me during this period. Thanks to Erik for the intensive support. Not only reviewing all my concepts during six years, but also supporting me during the presentation of the congress papers and supporting me after the dinners. The feedback in total has been of an exceptional level. Further thanks to the members of the PhD examining committee for reviewing this thesis and giving me valuable feedback.

Fun

I have reviewed many scientific articles for this dissertation. Of course science is a serious affair, but I have encountered some articles (and ideas) that go beyond the scientific focus and combine scientific research with an extraordinary and 'funny' approach. Sometimes it is the topic (e.g. Pascal's wager), sometimes it is the execution of the idea (how to prove that using student samples is wrong by using student samples; Van Lange et al., 2011), sometimes it is addressing what is not to be mentioned (dropping all your interview notes; Davis, 2006). While writing the dissertation I read an article about the goal-gradient hypothesis. In an experiment it was found that "rats in a straight alley ran progressively faster as they proceeded from the starting box to the food" (Kivets et al., 2006; p. 39). This hypothesis has been confirmed in consumer behavior research: Internet users who rate songs in return for reward certificates visit the rating site more often as they approach the reward goal. Finishing this dissertation I can confirm this hypothesis (n=1), but one should be aware of another wonderful survey in which it was 'proven' that people get younger when listening to the Beatles (Simmons et al., 2011).

Thanks friends and family

Thanks to Peter van Driel, Hans Carpay (the paranimphs) and Kasper van Reyendam for supporting me in many ways. Special thanks to Hans Minkema, who has been responsible for the design of this thesis. Of course I thank my family. My daughters Lian, Tessa and Emma for being there and for sometimes not being there. Special thanks to my wife Margot for always being there, even when I did not notice it.

"Biertje"

When I was a student in the beginning of the 1980s we were taught to use computers for analyzing the results, using SPSS. Every week we were 'given' an hour to work with the university mainframe to conduct our analyses. A week later you got the results; usually "an aborted run because of a failure". Researching literature for writing my master thesis meant spending many hours in several libraries, screening the volumes of journals in search of relevant articles. Conducting my research in the 21st century it is obvious that a lot has changed in 30 years. My personal computer has provided me with the statistical results instantaneous (these days SPSS informs me what I am doing wrong). Almost all academic journals can be searched from home, therewith indeed creating "an information overload" and so after finishing this dissertation I have to agree with Socrates: "As for me, all I know is that I know nothing". It has taken me 56 years to realize this, but it was worth the journey...

Huizen, May 31st 2013

MODELING CUSTOMER BEHAVIOR IN MULTICHANNEL SERVICE DISTRIBUTION: A RATIONAL APPROACH

TABLE OF CONTENT

"What should be the nature of the contributions made by IS scholarship to e-commerce research? Or to put it differently, what is the nature of the specific expertise held by IS scholars that distinguishes our e-commerce research from that undertaken by scholars from other disciplines?"

Benbasat and Zmud, 2003; p. 190

CHAPTER 1   RESEARCH QUESTION AND SCOPE

1.0   Abstract

Most organizations have innovated their distribution strategy and adopted a multichannel strategy. The success of this strategy depends to a large extent on the adoption of new channels by the consumer. Recent examples are Internet and mobile Internet; most channel innovations can be defined as ICT enabled channels. This research aims to build a model that explains consumer multichannel behavior. It gives answers to the question which factors influence the use of a new ICT enabled channel. The model will explain the trial and continuous use of new ICT enabled channels.

1.1   Motivation for the study

Over the last decades many service providers have been innovating their sales and distribution strategy into multichannel strategies in which they reach their customers through different channels (Anderson et al., 1997; De Vries and Brijder 2000). Traditional forms of distribution have been supplemented or substituted by direct forms of distribution and electronic distribution channels, like call centers, interorganizational information systems, automatic teller machines, electronic banking, interactive TV, mobile telephony and of course the Internet with its specific applications like extranets, virtual communities, portals and electronic markets. In some service industries, for instance the financial service industry, multichannel distribution has become the norm (Easingwood and Story 1996; Black et al. 2002; Hughes, 2003; Al-Hawari, 2006; Pavlou and Fygenson 2006; Coelho and Easingwood, 2008; Kwon and Lennon, 2009).

There are several reasons for companies to adopt a multichannel strategy (Easingwood and Story, 1996; Lederer et al., 2001; Sharma and Krishan, 2002; Stone et al., 2002; Bradley and Stewart, 2003; Ganesh et al., 2004; Coelho and Easingwood, 2004; Myers et al., 2004; Durkin and O'Donnell, 2005; Valos, 2008). Most mentioned and resembling the reasons for implementing self service technology in general (e.g. Bitner et al., 2002; Dabholkar and Bagozzi, 2002) are customer demand (Myers et al., 2004), reaching new consumer segments (Easingwood and Story, 1996; Coelho and Easingwood, 2004), cost reduction (Sharma and Krishan, 2002; Durkin and O'Donnell, 2005), attracting more profitable customers as multichannel customers seem to spend more (Ganesh et al., 2004; Venkatesan et al., 2007), improve customer relations (Lederer et al., 2001) and competitive reaction (Muylle et al., 1999; Bradley and Stewart 2003; Gounaris and Koritos, 2008). The advantages of a multichannel strategy in general have been described in a number of articles (e.g. (Barsh et al., 2000; Gulati and Garino, 2000; Huizingh 2002; Steinfeld 2002a, 2002b; Gibson et al., 2003; Zwass, 2003). But adding a new channel to the existing channels means more costs as all channels need to be maintained. This implies that organizations may decrease their costs by finding the proper multichannel strategy.

The success of a multichannel approach depends on the adoption and multichannel usage behavior of individual consumers. Multichannel consumer behavior implies the adoption of a new channel in the context of channels already in use. New channels might substitute[1] or supplement existing

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1 In the 1990s the disintermediation hypothesis, which foresaw the disappearance of "the middleman", was put forward in the popular press, but has soon been contradicted in academic research (see e.g. Van Tuijl and Ribbers, 2002, for an overview).

channels (Nysveen et al., 2000a; Dholakia et al., 2005; Van Birgelen et al., 2006) and several channels might be used in the same transaction process. Adoption of new channels and innovations in the channel configuration on the organizational level often need to be followed by influencing customer behavior regarding the use of channels which is known as the channel migration challenge (Myers et al., 2004). Suppliers generally have different reasons to migrate their customers to other channels than they are familiar with. One obvious reason is that they like their customers to migrate to channels with lower costs (for the supplier), but other reasons might be to migrate customers to channels with more relationship building or cross/deep selling opportunities.

Channel migration essentially is an innovation diffusion problem as innovations have been defined as providing "opportunities to increase the efficiency and quality of the service delivery process, both in the front and back office..." (Van der Aa and Elfring, 2002; p. 155). A supplier faces the challenge of diffusing innovations in its channel configuration to its customer with the aim of getting customers adopting new channel behavior. To design effective channel migration strategies it is necessary to understand factors that influence customer channel behavior and understand customer's trial and adoption of channels and her choice making between channels.

As the new channels in the last decades are mostly Information and Communication Technology (ICT) enabled channels, multichannel customer behavior receives growing attention in the information systems (IS) literature. The adoption of ICT applications, like electronic channels, has been a classical theme in the IS discipline and has been explained with several theories like the Technology Acceptance Model (e.g. Devaraj et al., 2002; Koufaris 2002; Gefen et al., 2003a, 2003b; Lai and Li, 2005), Task Technology Fit (e.g. Wells et al. 2003) or the Innovation Diffusion Theory (e.g. Tan and Teo, 2000). Most of these studies are restricted to the adoption of a new channel, e.g. ATM and more recently the Internet or mobile Internet.

Much of the literature stays within what can be called a dual-channel mind-set. General metaphors like "clicks versus bricks"; "bricks-and-mortar versus clicks" or "clicks and mortar" say it all; the emphasis is on the new vis à vis the existing. In papers on click and mortar for instance, the click category regularly boils down to the Internet and the mortar category is assumed to represent something like 'traditional retailing'. It should be kept in mind that mortar might represent different retail concepts and there is hardly such a thing as *the* Internet (there are Internet based distribution concepts, like in the financial service industry: home-banking, internet-banking, mobile-banking, financial portals or cybermediaries). Up until recently, multichannels and its drivers and consequences have received little attention (Balasubramanian et al., 2005; Rangaswamy and Van Bruggen, 2005). Only some studies genuinely work from a multichannel mind-set. Neslin et al. (2006) provide an overview of multichannel management challenges emphasizing integration and coordination and explicitly elaborating on customer behavior in a multichannel environment. Other examples are De Vries and Brijder (2000) on knowledge management in multichannel supply chains and De Vries (2003) on multichannel coordination and multichannel architectures. It can be concluded that genuine multichannel research is just to begin. Given the "ever-expanding multiciplicity of channels" (Valentini et al., 2011; p. 72) it becomes more and more important to understand the use of channels.

The purpose of this thesis is to extend the level of the research towards general insight regarding the use of a (new) ICT enabled channel instead of researching every newly introduced channel apart, as if it is the first time an innovation is introduced. It should be possible to explain the use of the Internet, the use of mobile Internet and the use of the channel that will be introduced in the next decennium within the same context. The aim of this thesis is to increase the insight in multichannel behavior by researching the way in which consumers choose between channels and therewith be able to predict the success or failure of a future new ICT enabled channel.

1.2   Research question

The research focus is on the trial and adoption and therefore choice of a new channel and has its origin in theories about technology acceptance and consumer choice. The central question in this thesis is:

> • *What factors explain consumer channel choice in an ICT enabled multichannel configuration, therewith finding an explanation for the trial, adoption and choice of a new channel?*

This main question leads to three sub questions that will be answered in this thesis:

> • *Which theories can be used to find the factors that explain the trial, adoption and choice of an ICT enabled channel by customers in a multichannel configuration?*
> • *Is it possible to arrive at a model based on these theories that explains the use of ICT enabled channels?*
> • *Can this model be confirmed empirically, that is can channel choice be predicted correctly?*

Through improving understanding of multichannel customer behavior the aim is to contribute to effective diffusion of channel configuration innovation by effective channel migration strategies. The results of this study are of relevance for organizations that have (or plan to have) multi channels to reach their customers. With the results of this study they gain further insights in the decision making process of their customers regarding the choice of the channel. Understanding how and why customers accept a channel will help to improve their channel management strategy. Channel management has received much attention since the introduction of the Internet, judging by the considerable amount of studies that have been published (e.g. Chircu and Kauffman, 1999; Ranchod and Gurau, 1999; Yip, 2000; Amit and Zott, 2001; Lederer et al., 2001; Vishawanath and Mulvin, 2001; Willcocks and Plant, 2001; Chaffy, 2002; Simons et al., 2002; Coelho and Easingwood, 2003, 2008; Bradley and Stewart, 2003; Bodily and Ventaraman, 2004; Kaarst-Brown and Evaristo, 2004; King et al., 2004; Wang and Cheung, 2004; Van Baal and Dach, 2005; Neslin et al., 2006; Albesa, 2007; Gensler et al., 2007; Kabadayi et al., 2007; Neslin and Shankar, 2009), but still the knowledge level of channel choice has been labeled recently relatively low (Pieterson, 2009).

The academic relevance of this study for the IS field is threefold. First this thesis provides insight in the relevant theories for explaining technology acceptance from a number of academic fields and combines results from social psychology research, IS research, behavior decision making research and marketing research to arrive at a model for explaining consumer behavior. Secondly the thesis will add a methodological approach to the IS field. In building the model step by step several research methods are used, that have (hardly) been applied in IS research, but have relevance for this academic field. Thirdly the individual technology adoption research is expanded with insight in how and why consumers choose across different channels. As will become clear, IS research on technology adoption has focused on explaining trial and adoption, but explaining how consumers choose between alternative technologies is still lacking in the IS literature. This thesis leads to the addition of new constructs and it may lead to insight how consumers choose between alternatives, therewith following the proposed future direction for research on individual level technology adoption by Venkatesh (2006; p. 509) who asks for work with the focus "on the choice an individual may make across different competing alternatives". For predicting technology use it has been stated that developing a more focused and context specific model is "considered an important frontier for advances in IS research" (Brown et al., 2010; p. 11).

Although the origin of this thesis is within the IS academic field, there is a contribution to the marketing academic field as well as it addresses several issues that have been mentioned as

important avenues for future research in the literature on multichannel customer management. First it raises the knowledge about the post-purchase stage, as most marketing studies focus on the information and the purchase stage (e.g. Verhoef et al., 2007; Konus et al. 2008) and the post-purchase stage is hardly considered in the multichannel marketing literature (Steinmann and Silberer, 2009). Secondly it provides some answers to a number of key issues in multichannel customer management (Neslin and Shankar, 2009): determination of segmentation possibilities and the effect of customer satisfaction (with a channel). Thirdly, in general it expands the knowledge by adding the mobile commerce channel (cf. Neslin et al., 2006, who mention a need to consider more channels) and it provides more information on predicting multichannel behavior as has been asked for by Schoenbachler and Gordon (2002). In this way this dissertation will decrease the "relative lack of research on consumer shopping behavior in a multichannel environment" (Dholakia et al., 2010; p. 87).

1.3   The scope of the research

After defining the purpose of the research, the research question and the relevance of the research the next step is the restriction of the research by defining the elements (Verschuren and Doorewaard, 1995). The research questions contain a number of elements that needs restriction and a number of elements that needs some further explanation. First the research is restricted to consumer behavior. Secondly the explanation of this behavior is restricted to the transaction stage. Thirdly this transaction stage is limited to the purchase of services. These three restrictions will be first explained, before defining the important elements, ICT enabled channel and multichannel behavior.

Consumer behaviour

In building a model to explain consumer multichannel behavior it is obvious that consumer behavior is the object of this research. The strategy of companies plays a role as this strategy influences the behavior of consumers. In general these strategies are explained from two perspectives: the resource based view (e.g. Wernerfelt, 1984; Barney, 1991, 2001, 2002; Prahalad and Hamel, 1990; Peteraf, 1991; Barney and Zajac, 1994; Mata et al., 1995; Hooley et al., 1998; Priem and Butler, 2001; Barney et al., 2002; Hamel and Prahalad, 1994; Drejer, 2002; Oetzel, 2004) and the structure-conduct-performance view (e.g. Porter, 1980, 1985, 1996; Porter and Millar, 1985; McWilliams and Smart, 1993; Treacy and Wiersema, 1993, 1995). Although the channel strategy of organizations (for instance eGovernment) and companies influences the behavior of consumers, the channel strategy and reasons behind this strategy (see e.g. Peterson et al., 1997; Holmsen et al., 1998; Ranchhod and Gurau, 1999; Earl, 2000; Oosterhaven, 2000; Coltman et al., 2001, 2002; Gertner and Stillman, 2001; Porter, 2001; Shin, 2001; Chaffey, 2002; Fahy and Hooley, 2002; Lucas, 2002; Steinfeld et al., 2002a; Stone et al., 2002; Bodily and Venkataraman, 2004; Lee and Grewal, 2004; Jelassi and Enders, 2005; Müller-Lankenau et al., 2005; Nelmapius et al., 2005; Muthitacharoen et al., 2006a; Farquhar and Panther, 2007) are beyond the scope of this research.

Use of the channel

In the marketing literature there has been consensus[2] on the five steps a consumer takes from problem recognition to the use of the product or the service (Howard and Sheth, 1969; Engel et

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2 For a critical review see Erasmus et al., 2001. Verhagen (2003) mentions two other perspectives. The experiential perspective, in which there is attention for situations in which purchases are done without the traditional stages. This perspective has more attention for emotions and feelings; well-known purchase types are impulse buying (e.g. Cobb and Hoyer, 1986, Youn and Faber, 2000; Madhavaram and Laverie, 2004, for impulse purchasing on the Internet) and variety seeking (e.g. Bettman, 1971). The second perspective, behavioral influence , focuses on the direct effects of environmental forces like store lay-out, store design, store music.

al.,1990; Glezer and Yadav, 2001; Shim et al., 2002; Blackwell, 2001; Mudie et al., 2003; Gupta et al., 2004; Schiffman and Kanuk, 2007). The five steps are (Kotler, 2003, p. 204):
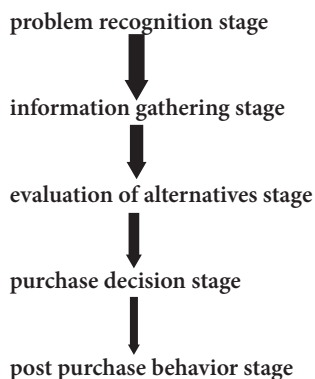
problem recognition stage

↓

information gathering stage

↓

evaluation of alternatives stage

↓

purchase decision stage

↓

post purchase behavior stage

Figure 1.1 The stages of consumer decision making

Research on the use of channels during these stages of decision making (e.g. Häubl and Trifts, 2000; Ramaswami et al., 2000; Borenstein and Saloner, 2001; Bechwati and Xia, 2003; Klein and Ford, 2003; Moe and Fader, 2003; Ratchford et al., 2003; Browne et al., 2004; Gupta et al., 2004; Kohli et al., 2004; Balasubramanian et al., 2005; Doffer et al., 2005; Kumar et al., 2005; Dabholkar, 2006; Moe, 2006; Zhang et al., 2006/2007; Soopramanien et al., 2007; Weltevreden, 2007; Kuruzovich et al., 2008; Slack et al., 2008; Van Nierop et al., 2011) has made it clear that the stage in which the consumer is active in the decision making process is important in explaining the choice of a channel. The factors explaining the use of channels differ per stage in this decision making process. To give one example: in the information gathering stage the reasons for using a channel differ from the reasons for using a channel during the purchase decision stage. An explanation for the behavior of a consumer is therefore limited to a specific stage. The scope of this study is restricted to the use of the channel in the purchasing stage. The restriction to one stage is not uncommon in the literature as the list of topics in appendix 2 shows. Studying more than one stage is even an exception as Pavlou and Fygenson (2006) observe. The choice for the purchase stage is based on the fact that this is for most organizations the most important stage (without a purchase, there is no turnover).

Services

Differences between a service and a product have been discussed extensively in the literature; this discussion has led to some sort of consensus[3] (e.g. Lovelock, 1983; Zeithaml et al., 1985; Murray, 1991; Abernethy and Butler, 1992; Hartman and Lindgren, 1993; Reardon et al., 1996; Grove and

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3 Recently however there has been debate about the goods versus the services paradigm (Grove et al., 2003; Lovelock and Gummesson, 2004; Vargo and Lusch, 2004; Vargo et al., 2006; Vargo and Lusch, 2006; Gummesson, 2006; Grönroos, 2006; Achrol and Kotler, 2006). Central question in the debate is whether service marketing is a different field of marketing. Some authors state that service marketing should be the dominant logic (Vargo and Lusch, 2004, 2008) and that "goods marketing is a special case of service marketing, a case in which the interactions with customers is solely related to the goods" (Grönroos, 2006; p. 363). This echoes earlier comments of Oliver et al. (1997) that "manufacturers realize that their real purpose is serving customers, and the physical product is just one part of the overall service" (p. 312). The emergence of the Internet might have led to some of this concern; Brown (2000; p. 62) states that "the ability to obtain and consume services without interacting with a human provider challenges much of our existing knowledge". This also applies for the tangibility concept, where the Internet has 'made' products intangible (Laroche et al., 2001).

Fisk, 1997; Lings, 1999; De Vries et al., 1999, 2001; De Vries, 2003; Laroche et al., 2004; Lovelock and Gummesson, 2004; Edvardsson et al., 2005; Lovelock and Wirtz, 2006; Rai and Sambamurthy, 2006). A large number of authors has shown the importance of the nature of the products and services and of the differences between products and services for the use of ICT enabled channels (e.g. Kierkowski et al., 1996; Loebbecke, 1999; Poon, 1999; De Figueriedo, 2000; Tsao and Lin, 2000; Jahng et al., 2001; Girard et al., 2003; Grewal et al., 2002; Peck and Childers, 2003; Perotti et al., 2003; Zeng and Reinartz, 2003; Kiang et al, 2004; Koiso-Kantilla, 2004; Kolsaker et al., 2004; Korgaonkar et al., 2006; Huang et al., 2009; Mudambi and Schuff, 2010). It is obvious that the nature of services has some implications for the factors that explain the use of a new ICT enabled channel. For instance services are seen as riskier from a consumer's point of view, given the fact that they are intangible and heterogeneous. This might lead to a difference in the factors that determine the choice of a channel when consumers purchase a product or a service. The scope of this research is restricted to the purchase of services.

After defining the scope of the research two elements mentioned in the research questions need further explanation, ICT enabled channel and multichannel behavior.

ICT enabled channels

The term Information and Communication Technology (e.g. Maes, 2007) or Information and Communications Technology or Information and Communication Technologies (e.g. Kim and Oh, 2011), ICT, is said to be ubiquitous (De Vries and Huizing, 2007), which is probably true as in numerous publications the term is not defined (e.g. Cuppen and Cuppen, 2004; Boonstra, 2005; De Vries and Huizing, 2007). It includes the integration of telecommunications (telephone lines, wireless) with information systems. It refers to all technical means used to handle information and aid communication, including computer and network hardware, as well as necessary software. In this thesis ICT enabled channels are defined as channels that make use of information systems or communication systems to facilitate the purchase of a service. This definition comes close to the definition of electronic commerce (eCommerce): "Electronic commerce deals with the facilitation of transactions and selling of products and services online, i.e. via the Internet or any other telecommunication network" (Jelassi and Anders, 2005; p. 4). Although eCommerce has been defined broader and to include not only transactions and selling, but also communication (Chaffey, 2002), ICT enabled channels are even broader. An example may clarify this. If one needs to withdraw cash money from the bank account, a visit to the branch is a possibility; a visit to an ATM is another possibility. This latter channel is an example of an ICT enabled channel: the machine checks the personal code, account balance et cetera through a communication system (perhaps Internet based) and based on that information either provides the amount of requested money or refuses to provide the money. However: no one will cite this as an example of eCommerce.

Multichannel behaviour

Channels are part of the marketing mix: the 'p' of place in the traditional 4P's (e.g. Blackwell et al., 2001; Kotler, 2003; Verhage, 2010). The channel delivers the product or service and it has been defined as a contact point "through which the firm and the customer interact" (Neslin et al., 2006; p. 96; see also Farquhar and Panther, 2007). Multichannel behavior has been described from the organization's point of view and from the consumers' point of view. In defining consumer's multichannel behavior usually two points of view are taken. One definition is the use of several channels during the transaction process of buying one product or service. The transaction process starts with the gathering of information and ends with post purchase behavior and during this process several channels are used (e.g. research of Van Baal and Dach, 2005; Verhoef et al., 2007; Konus et al. 2008; Schröder and Zaharia, 2008). The second definition, that is used in this dissertation,

views consumers' multichannel behavior as the use of several channels for the purchasing of a similar product or service (similar with research of for instance: Ansari et al., 2005; Dholakia et al., 2005; Gensler et al., 2007; Venkatesan et al., 2007; Weltevreden and Van Rietbergen, 2007; Cortinas et al., 2010). This is behavior in which the consumer buys books on one occasion in the bookstore, while on another occasion orders these online.

1.4   The research process

The research process involves a number of choices regarding research philosophy, research approach and research strategies that influences the data collection and the data analysis. These choices are related to the research question. The aim of this thesis is to develop a model that predicts and explains the use of channels in a multichannel configuration. The primary goals of theories have been summarized as follows (Gregor, 2002, 2006):

THEORY TYPE	DISTINGUISHING ATTRIBUTES
Analysis	Says what is. The theory does not extend beyond analysis and description. No causal relationships are specified; no predictions are made
Explanation	Says what is, how, why, when and where. Theory does not aim to predict; there are no testable propositions
Prediction	Says what is and what will be. Provides predictions and testable propositions, but has no well developed causal explanations
Explanation and prediction	Says what is, how, why, when, where and what will be. Provides predictions, has testable propositions and causal explanations
Design and action	Says how to do something. Gives explicit prescriptions (e.g. methods, techniques) for constructing an artifact

Table 1.1 Taxonomy of theories in Information Systems Research (Gregor, 2006; p. 620)

The research question of this thesis leads to the development of a model that is of the Explanation and prediction type. In IS research three research paradigms have been mentioned: positivist, interpretivist and critical (Orlikowski and Baroudi, 1991; Mingers, 2001; Richardson and Robinson, 2007; Jones and Karsten, 2009). Although theory types do not belong to a particular research paradigm, the positivist research paradigm has been associated with the Explanation and prediction type (Gregor, 2006). This research is conducted within the positivist tradition and fits the research process that is generally presented as follows (e.g. Edmondson and McManus, 2007; Van Maanen et al., 2007; Berg and Lune, 2012; Saunders et al., 2012):

Ideas -> Theory -> Design -> Data Collection -> Analysis -> Findings

The research question and the sub questions lead to an approach in this thesis that can be described as deductive: based on a review of potential theories a model for predicting the use of a new channel will be developed. In this thesis the theory review will lead to a model that makes it possible to predict the channel choice and to explain the channel choice. The next step is to test the model by testing hypotheses through data collection. In general, two methodologies are possible: qualitative and quantitative research (Bryman and Bell, 2011; Bryman, 2012; Saunders et al., 2012). Quantitative research is often associated with the deductive approach and qualitative research is often associated with the inductive approach (e.g. Saunders et al., 2012), but this association is not deterministic. Hybrid methods, that mix qualitative and quantitative research strategies have

been described as a fruitful course (Karami et al., 2006) that should be encouraged (Suddaby, 2006) and have received attention in the business studies (e.g. Edmondson and McManus, 2007; Bryman and Bell, 2011; Saunders et al., 2012) and the IS literature (e.g. Kaplan and Duchon, 1988; Mingers, 2001). In this dissertation a sequential multimethod research design will be used. After building the model, based on the literature review, a qualitative research is used to build the constructs. The model is tested in a quantitative research. The results lead to two follow-up studies that lead to triangulation of the results: a quantitative and a qualitative study. The 'real' test of the model (and the accompanying hypotheses) is done by means of a quantitative study. The rejection of some of the hypotheses leads to alternative explanations that can be seen as a revision of the theory, therewith completing the deductive research process. The choices regarding research strategies and statistical analyses are discussed in detail in chapter 3 and chapter 4.

1.5 The structure of the thesis

The thesis consists of three parts, each addressing one of the three sub questions, as is illustrated in figure 1.5.
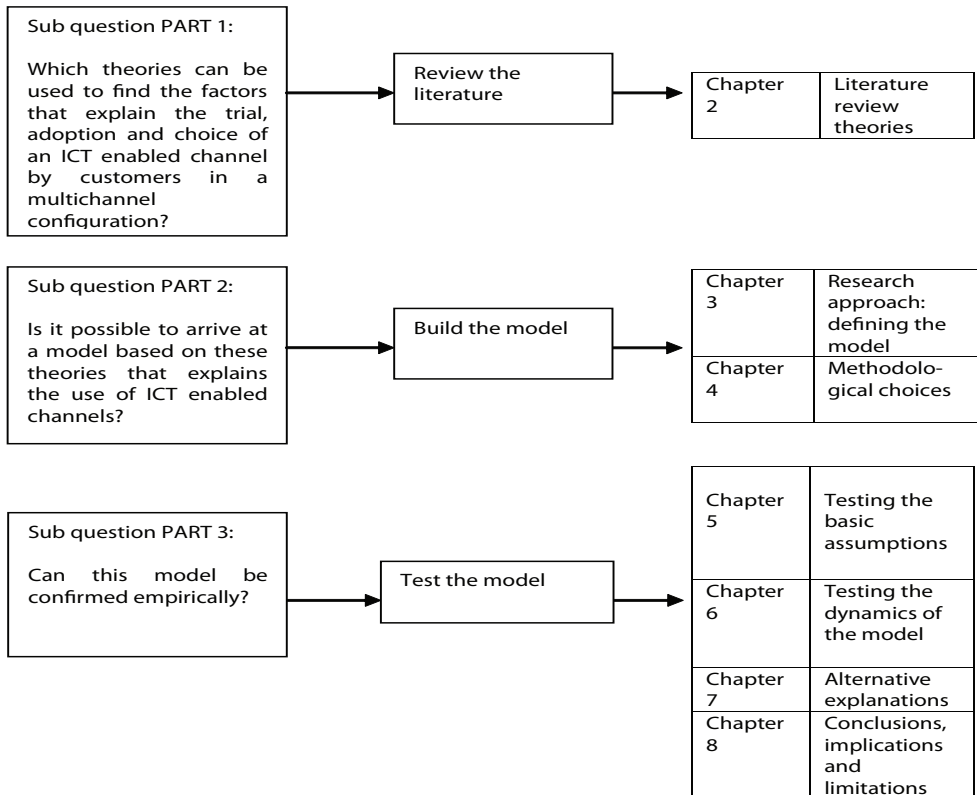
Figure 1.2 The structure of the thesis

The first step is to find the relevant theories. In chapter 2 the literature regarding eCommerce and the use of the Internet will be reviewed. This review leads to a number of potentially relevant theories. These theories are briefly discussed and evaluated on their relevance for the elements of multichannel

behavior, explaining the trial, adaptation and choice of a channel. This review leads to the selection of two theories that can explain trial and adoption of a channel: the Technology Acceptance Model and the Expectation Disconfirmation Theory. However, it becomes clear that the discussed theories have shortcomings in explaining an important element of multichannel behavior: the decision making process that leads to the choice of a channel. Therefore the search for relevant theories is expanded into the fields that explain consumer choice pre-eminently: theories from behavioral economics, social psychology and marketing. The marketing construct consideration set and the model of the multi attribute attitude model are added to the multichannel model. This leads to the building of the model. In chapter 3 the model is used to build the research constructs. In this chapter it becomes clear that the theoretical foundations of some of the theories are rather weak. This leads to a qualitative research to build the constructs; the research model is tested and evaluated in a pilot research, leading to some adjustments and the formulation of the research hypotheses. In chapter 4 the research design (e.g. sample, method) is described. Chapter 5 and chapter 6 give the results. In chapter 5 the general results are discussed; in chapter 6 the hypotheses are tested and in chapter 7 alternative explanations are put forward. Chapter 8 contains the conclusions, the implications for the academic and managerial world and the limitations of the research.

"E-commerce adoption is an instance of IT acceptance and use within a setting that combines technology adoption with marketing elements, and it thus requires distinct theorization within the information systems literature."

Pavlou and Fygenson, 2006; p. 116

CHAPTER 2 LITERATURE REVIEW[4]

2.0   Abstract

This chapter addresses the first part of the research question: which theories can be used to explain multichannel behavior? The approach followed in this chapter is the use of the large amount of literature on the use of Internet and eCommerce that has appeared in the academic journals since 1995. The theories used in this research are evaluated on their relevance for multichannel behavior in an ICT context. The elements that have to be explained are trial, adoption (continuous use) and the choice between channels. The theories are from several academic fields. From IS research the theories that are described are: Technology Acceptance Model, Unified Theory of Acceptance and Use of Technology, Innovation Diffusion Theory, Information Systems Success Model and Task Technology Fit Model. From the field of the communication media research Media Richness Theory and Uses and Gratifications Theory; from the psychology field general theories about human behavior are discussed: Theory of Reasoned Action, Theory of Planned Behavior, Social Cognitive Theory and Social Exchange Theory. The marketing field provides Expectation Disconfirmation Theory and switching behavior. After the review the relevance of the theories for explaining multichannel behavior is evaluated in an evaluation matrix. It is concluded that the Technology Acceptance Model and the Expectation Disconfirmation Theory are most suitable for explaining trial and adoption of an ICT enabled channel but provide hardly insight in the choice process. Therefore the research is expanded to include theories that explain consumer choice. In psychology and economics, the most relevant academic disciplines studying consumer decision making, a large number of theoretical models has been developed to explain consumer behavior. The basis of these theories is the Subjective Expected Utility Model (SEU). In economics this behavioral decision research has led to a stream of research since the 1970s that has challenged the assumptions of the SEU model, leading to adoptive decision making and prospect theory. In the attitude based social psychology it has resulted in the expectancy value model that has been challenged by models that have more attention for the influence of past behavior and habit, therewith questioning the assumption that attitudes are formed every time. The theories have found their way in the marketing discipline and have resulted in similar concepts, leading to the consideration set model and the consumer purchase model. Based on the analysis of the theories in the three academic fields, a choice model is selected to complete the model.

2.1   Introduction

As has been mentioned in the previous chapter, the main research question leads to three sub questions. In this chapter the first sub question will be discussed:

- *Which theories can be used to find the factors that explain the trial, adoption and choice of an ICT enabled channel by customers in a multichannel configuration?*

To find the theories it is necessary to describe multichannel behavior more accurate. Multichannel behavior can be seen as customer behavior towards new channels which is generally understood in

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4 This chapter is partly based on Heinhuis and De Vries, 2009.

terms of trial and adoption, while customer choice between familiar channels is mainly understood in terms of customer satisfaction (with these channels) and associated switching behavior. Therefore, multichannel customer behavior is considered to consist of three elements: trial of new channels; adoption/continued use of channels and choice making between channels. Besides these three elements two other context related aspects in the research question have to be considered: it refers to ICT enabled channels and it refers to the purchase of services by consumers. The research question can be 'translated' into a framework:
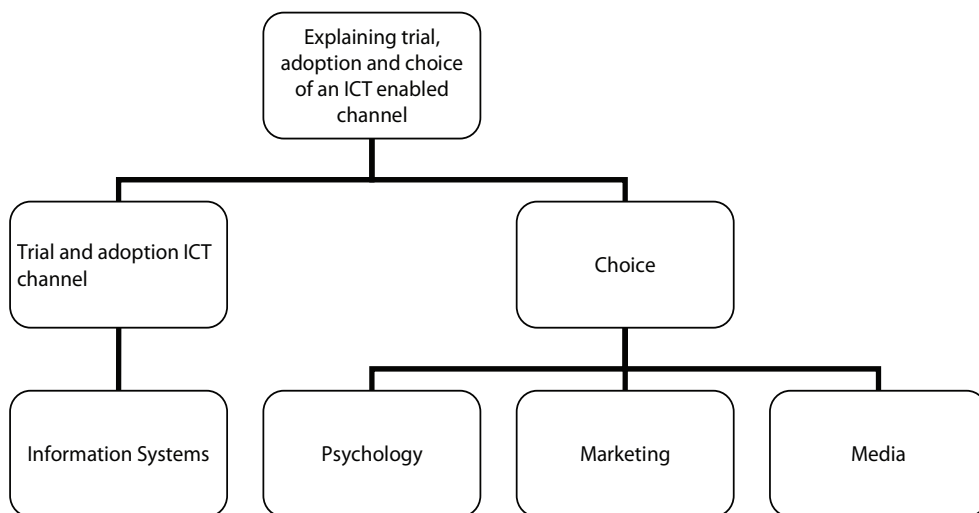
Illustration 2.1 Theoretical framework

The first academic field is the Information Systems literature as studying trial and adoption of an ICT enabled channel has had a prominent place in IS research (e.g. Bhattacherjee, 2001a, 2001b; Bhattacherjee and Premkumar, 2004; Bhattacherjee and Sanford, 2006; Hong et al., 2006; Premkumar and Bhattacherjee, 2008; Venkatesh and Goyal, 2010). It is obvious that the choice of a channel involves human behavior in general and therefore the psychology field is of relevance. Consumer behaviour is studied pre-eminently in the marketing field that should therefore be included as well. The term channel leads to another potential academic field as channel and medium are sometimes used interchangeably (Neslin et al., 2006; Pieterson, 2009). This might be attributed to Shannon, who defined the channel as "merely the medium used to transmit the signal from transmitter to receiver" (1948; p. 381) and who developed (with Weaver) the standard model to describe information flows. Although in this thesis the channel is seen as different from the medium as it focuses on transactions, the media channel choice literature can be expected to have relevance for answering the sub question. This means that not only the obvious relevant fields of IS, psychology and marketing have to be studied, but also theories in the field of psychology and media channel choice have to be taken into consideration.

The second step is to define which studies can be used to find the relevant theories in the mentioned academic fields. This approach is based on the assumption that the academic fields are too broad to study all existing theories; therefore a selection of the theories in these fields has to be made. The Internet can be seen as the most recently introduced ICT enabled channel; therefore it is assumed that the used theories to explain the use of the Internet will have relevance for the scope of this research. This is also based on the observation that multichannel research started to develop after

the introduction of the Internet and has become an academic topic since the start of eCommerce as is shown by the numerous articles that have been published on multichannel strategies (e.g. Chircu and Kauffman, 1999; Barsh et al., 2000; Vishwanath and Mulvin, 2001; Huizingh, 2002; Steinfeld, 2002a, 2002b; Gibson, 2003; Zwass, 2003). The studies on eCommerce, online shopping and the adoption of the Internet are taken as a starting point to gain insight in the relevant theories. The reasoning is that theories that are used in these studies have potential relevance for this thesis. This approach is not uncommon in IS research as many authors study IS adoption based on earlier theoretical models (e.g. Venkatesh and Morris, 2000; Premkumar and Bhattacherjee, 2008; Venkatesh and Goyal, 2010). The fact that the research focuses specifically on services and Internet means literature in these fields has also to be taken into account. In appendix 1 the list of all reviewed journals is presented. A total of 169 journals have been studied, divided as follows:

Information Systems	37
Marketing	44
Psychology	16
eCommerce/services	21
General	51

In table 2.1 the results of this literature review are presented. Those publications that have relevance for the multichannel elements (trial, use, choice of an ICT enabled channel) are presented in the fourth column. In the first column the theory for explaining that behavior is mentioned, with a reference to the origin of the theory. In column 2 and 3 the focus and the most important elements are presented. The theories are presented per relevant academic field: IS, media channel theories, psychology and marketing.

THEORY AND ORIGIN	FOCUS	CONSTRUCTS	MULTICHANNEL RELEVANT LITERATURE
IS THEORIES			
Technology Acceptance Model (TAM) (Davis, 1989)	Acceptance of information systems	Perceived Ease of Use, Perceived Usefulness	Ahn et al., 2004; Bhattacherjee, 2001a;, 2001b; Bhattacherjee and Premkumar, 2004; Carter and Belanger, 2005; Chau and Lai, 2003; Chen and Tan, 2004; Chen et al., 2004; Cho, 2006; Cyr et al., 2007; Devaraj et al., 2002; Gardner and Amoroso, 2004; Gefen, 2002; Gefen and Straub, 2000; Gefen and Straub, 2003; Gefen et al., 2003a; Gu et al., 2009; Hampton-Sosa and Koufaris, 2005; Hong et al., 2006; Jiang et al., 2000; Khalifa and Liu, 2005; Kim and Malhotra, 2005; Kim et al., 2009; Klaus et al., 2003; Koufaris, 2002; Lai and Li, 2005; Lee et al., 2006; McCloskey, 2003; Muthitacharoen et al., 2006b; Nysveen et al., 2005b; O'Cass and Fenech, 2003; Pavlou, 2003; Shih, 2004; Son et al., 2006; Sundarraj and Wu, 2005; Van der Heijden, 2004; Venkatesh and Ramesh, 2006; Vijayasarathy, 2004; Wang and Benbasat, 2005; Yang et al., 2007
Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003)	Use of information systems	Performance expectancy, effort expectancy, social influence, facilitating conditions	Cody-Allen and Kishore, 2006; Im et al., 2011; Liu and Forsythe, 2011

Innovation Diffusion Theory (IDT) (Rogers, 1962)	Adoption of innovations in general	Relative advantage, Compatibility, Complexity, Triability, Observability	Carter and Belanger, 2005; Cho, 2006; Eastin, 2002; Mallat, 2007; Parthasarathy and Bhattacherjee, 1998; Pechtl, 2003; Tan and Theo, 2000; Wikström, 2005
DeLone & McLean IS Success Model (DeLone and McLean, 1992)	Success of an Information System	System quality, Information Quality, Individual impact, Organizational impact	Chen and Hitt, 2002; DeLone and McLean, 2004; Fan, 2006; McKinney et al., 2002; Wang, 2008
Task Technology Fit (TTF) (Goodhue and Thompson, 1995)	Use and success of the use of information systems in organizations	Task Technology Fit, User Performance	Gefen and Straub, 2000; Klaus et al., 2003; Wells et al. 2003
MEDIA CHANNEL THEORIES			
Media Richness (Daft and Lengel, 1986)	Use of different information channels for different situations in organizations	Uncertainty, Equivocality, Media Richness	Evans and Wuster, 1997, 1999, 2000; Lo and Lie, 2008; Qiu and Benbasat, 2005; Sun and Cheng, 2007
Uses & Gratifications (U&G) (Katz, 1959)	The use of different media is formed by different needs	Needs, content and process gratifications	Kink and Hess, 2008; Ko et al., 2005; Nysveen et al., 2005b; Stafford et al., 2004
PSYCHOLOGY THEORIES			
Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975)	Human behavior in general	Attitude towards behavior, Subjective norms	Lu and Lin, 2002; Shih, 2004
Theory of Planned Behavior (TPB), (Ajzen and Madden, 1986)	Behavior in situations in which the actor has no complete control	TRA constructs, Perceived Behavior Control	Chih-Chung and Chang, 2005; Hansen, 2008; Hansen et al., 2004; Herrero and Rodriquez, 2008a; Hsu and Chiu, 2004; Pavlou and Fygenson, 2006; Tan and Theo, 2000; Wu, 2006; Ramayh et al., 2009
Social Cognitive Theory (SCT) (Bandura, 1986)	Behavior of individuals which is influenced by (among others) the behavior itself	Personal factors, Self-efficacy, Behavior Modeling	Looney et al., 2006; Torzadeh, 2006
Social exchange theory (Homans, 1958)	Human behavior: why does social exchange occur	Dedication and constraint	Kim and Son, 2009
MARKETING THEORIES			
Switching behavior (Keaveney, 1995; Roos, 1999)	Switching of consumers between service providers	Triggers, Determinants,	Holloway and Beatty, 2003; Kim et al., 2006; Reinartz et al., 2005;
Expectancy Disconfirmation Theory (EDT) (Oliver, 1980)	The continued use of product/services by consumers	Satisfaction, Expectation, Desire	Bhattacherjee, 2001a, 2001b; Bhattacherjee and Premkumar, 2004; Hong et al., 2006; Hsu and Chiu, 2004; Khalifa and Liu, 2005; Koppius, 2005; Massad et al. 2006; McKinney et al., 2002

Table 2.1 Theories used in eCommerce literature

From table 2.1 it becomes clear that a large number of theories has been used in analyzing and explaining the use of a new channel, in this case represented by the Internet. The next step is

describing these theories that might be of relevance for finding the factors that explain consumer behavior in a multichannel context. This implies that the theories will be evaluated on their relevance for the important elements in this part of the research:

- consumer behavior;
- trial and adoption of an ICT enabled channel;
- choice between channels.

After this description the theories will be evaluated on the relevant elements in an evaluation matrix.

2.2 IS theories

Technology Acceptance Model

The Technology Acceptance Model (TAM) builds upon the well-established theories about general consumer behavior, Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB), that will be discussed in depth further on in this chapter. The Technology Acceptance Model is an adaptation of the Theory of Reasoned Action (Szajna, 1996; Anandarajan et al., 2000; p. 70; Legris et al., 2003; O'Cass and Fenech, 2003; Keen et al., 2004; Hansen, 2006; Wang et al., 2006; Lin, 2007; Chang and Wang, 2008; Gu et al., 2009; Kim et al., 2009; Kuo and Yen, 2009; Lu et al., 2009) and is specifically tailored for user acceptance of information systems (Davis et al., 1989). It has been in one way or the other used in numerous studies to explain the user acceptance of information technology at work (e.g. Davis, 1989; Adams et al., 1992; Hartwick and Barki, 1994; Hubona and Geitz, 1997; Karahanna and Straub, 1999; Karahanna and Limayem, 2000; Venkatesh and Davis, 2000; Venkatesh, 2000; Gefen and Straub, 2000; Ahuja and Thatcher, 2005; Burton-Jones and Hubona, 2005; Broekhuizen, 2006; Sykes et al., 2009).

It has received significant support (e.g. Szajna, 1994). It follows the chain: Attitude → Intention → Behavior (Schubert, 2002). The two variables that cause people to accept or reject information technology are:

- perceived usefulness, which is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989; p. 320);
- perceived ease of use, which refers to "the degree to which a person believes that using a particular system would be free of effort" (ibid.).

In research Davis et al. (1989) find that Perceived Usefulness has a direct influence on behavioral intention as well as through attitude. Compared to the original TRA it is supposed in TAM that there are only two important variables, that need not to be elicited anew for every research into the acceptance of IS. The model can be visualized as follows (Davis et al., 1989; p. 985; Szajna, 1996; p 86; Jiang et al., 2000; p. 268; Kim et al., 2009, p. 8530):
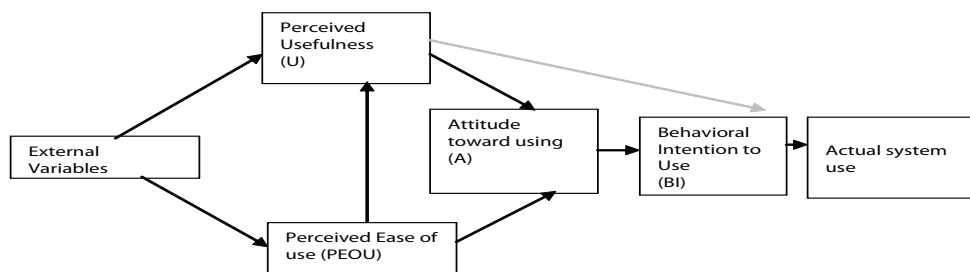

Figure 2.1 The Technology Acceptance Model (Davis, 1989; Davis et al., 1989)

Unified Theory of Acceptance and Use of Technology (UTAUT)

In reviewing eight models Davis (author of TAM) and others (Venkatesh et al., 2003) come to the Unified Theory of Acceptance and Use of Technology (UTAUT). This model is based on the Theory of Reasoned Action, Theory of Planned Behavior, TAM and TAM2[5], model of PC utilization, Motivational Model, Innovation Diffusion Theory and Social Cognitive Theory. In this model performance expectancy and effort expectancy are related to TAM's perceived usefulness and perceived ease of use (Hennington and Janz, 2007; Qingfei et al., 2008). Social influence is similar to social norms (see Theory of Reasoned Action) and facilitating conditions is similar to perceived behavioral control (see Theory of Planned Behavior). The attitude towards using a technology is omitted, leading to the model as described in figure 2.2.
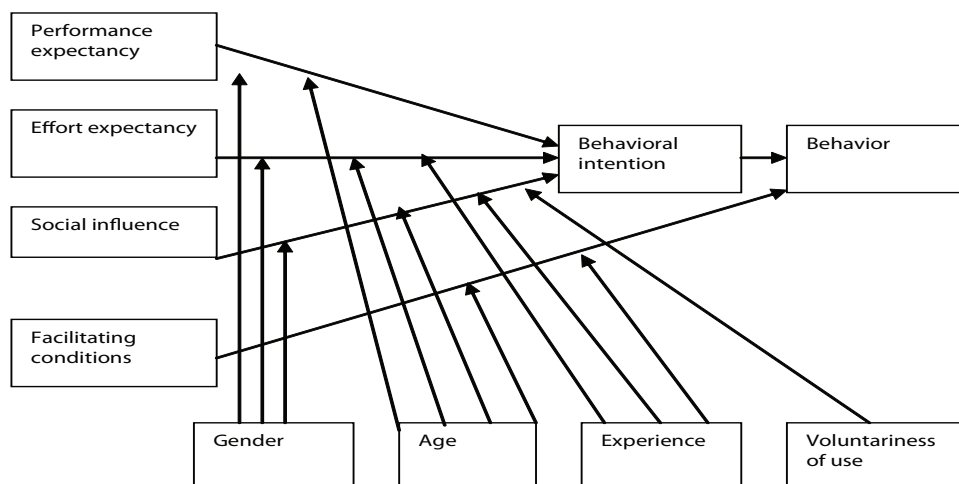
Figure 2.2 The Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003)

Innovation Diffusion Theory

Although the diffusion of innovation theory of Rogers (1962; 1995) is not specifically developed for IS research or marketing (e.g. Mahajan, 1990a, 1990b), it has been used in a number of IS research

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5 Venkatesh and Davis (2000) extend the TAM into TAM2 by including Subjective Norm (conform the original Theory of Reasoned Action) for those situations in which the use is not voluntary. Whenever an individual feels that a social actor wants a specific behavior and this social actor has the ability to reward or punish the behavior there will be an effect of subjective norm on intention. They introduce a variable "voluntariness", which is defined as the extent to which potential adopters perceive the adoption decision to be non-mandatory (Argarwal and Prasad, 1977; Hartwick and Barki, 1994; Moore and Benbasat, 1991). They find that the extension with social influence processes but also cognitive instrumental processes improve the model. (For this research it is interesting to note whether the use of a new ICT enabled channel can be seen as a voluntary behavior). In another study (Venkatesh and Morris, 2000) the role of social influence is confirmed, while adding the influence of gender: men are more focused on perceived usefulness, while women are more focused on perceived ease of use. In TAM2 attitude towards using a technology is omitted (e.g. Venkatesh, 2000; Premkumar and Bhattacherjee, 2008; Chiu et al., 2009; Turner et al., 2010) as a consequence of the results of the research conducted by Davis et al. (1989). These results indicate that a positive affect (attitude) toward using is not necessary to have a high intention to use as people might have a high intention because of the usefulness and not the attitude (Venkatesh, 2000). The most recent model is TAM3, developed by Venkatesh and Bala (2008).

articles, often in combination with other models (e.g. Moore and Benbasat, 1991; Karahanna et al., 1999; Plouffe et al., 2000; Plouffe et al., 2001; Speier and Venkatesh, 2002; Bhattacherjee and Sanford, 2006), to explain the acceptance of an IS. The nature and characteristics of an innovation contribute to the desirability of the innovation and therefore the adoption. The IDT identifies five general attributes (or characteristics) of innovations that influence adoption. These attributes are (Rogers, 1995):

- Relative advantage is the degree to which an innovation is perceived as being better than the idea it supersedes (p. 212):
  - economic factors;
  - status aspects.

- Compatibility is the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters (p. 224):
  - compatibility with values and beliefs;
  - compatibility with previously introduced ideas;
  - compatibility with needs.

- Complexity is the degree to which an innovation is perceived as relatively difficult to understand and use (p. 242).

- Trialability is the degree to which an innovation may be experimented with on a limited basis (p. 243).

- Observability is the degree to which the results of an innovation are visible to others (p. 244).

Sometimes are added cost of the innovation (purchase and switching costs), uncertainty and social relevance (Gatignon and Robertson, 1985). The nature of an innovation is the form it takes. Three possibilities are mentioned (Bagozzi and Lee, 1999): an innovation might consist of improvements to existing attributes, it might introduce new attributes to existing products or services or it might be an entirely new product or service.

Although the theory is about perceived characteristics of an innovation and not about actual usage (or intention to use), it has been recast in terms of using the innovation (Moore and Benbasat, 1991). It can be noted that relative advantage is analogous to the perceived usefulness construct in the Technology Acceptance Model and complexity is analogous to the ease of use construct in the same model (Moore and Benbasat, 1991; Taylor and Todd, 1995a; Agarwal and Prasad, 1998; Wu and Wang, 2005).

Information Systems Success Model

DeLone and McLean (1992) draw on the work of Ives and Olson (1984) and Zmud (1979) and review 100 studies on I/S success in their quest for the dependent variable to measure information systems success. Based on models from the communication theory (Shannon and Weaver, 1949; Mason, 1978) they come to six originally defined major dimensions to explain the success of a system, which are related to the information flows through a series of stages, from production to consumption to influence on performance (DeLone and McLean, 1992). These categories are interrelated and interdependent, forming an I/S success model and lead to the following model (ibid., p. 87):
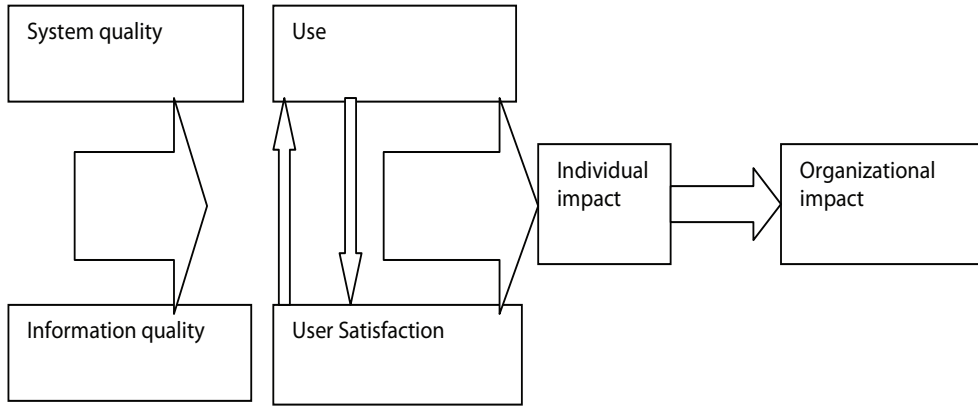
Figure 2.3 The Delone and McLean IS Success Model (1992)

In the model the system quality measures the technical success, information quality is a measure for semantic success and effectiveness is measured by use, user satisfaction, individual impact and organization impact. The model can be seen as a temporal process model or a causal or variance model.[6] The model has been widely used, although there is a dearth of empirical studies (Iivari, 2005). Most of the empirical investigations have supported the model (DeLone and McLean, 2003). Seddon (1997) criticizes the combination of process and variance interpretations of IS success; other comments on the model and the constructs have been given. Based on the research contributions the model has been updated (DeLone and McLean, 2003, p. 24):
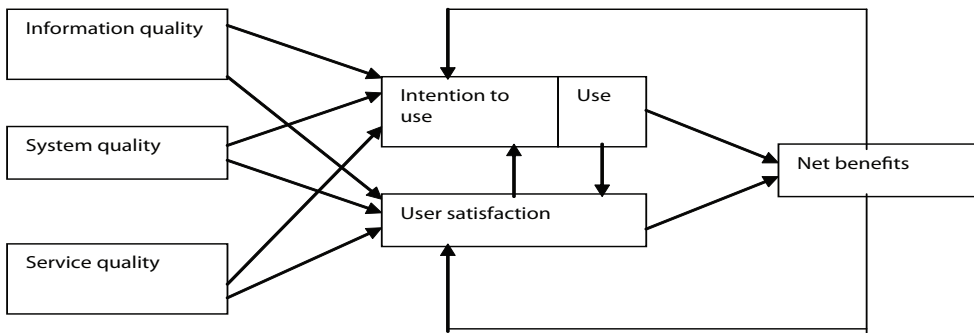
Figure 2.4 The updated DeLone and McLean model (2003)

Service quality is added and organizational and individual impact are together under the dimension net benefits. Intention to use is an attitude which might resolve some of the problems with the

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6 A process model can be described as follows: an IS is created with features, which can be seen as a degree for system and information quality. When it is used, users will experience these features and either be satisfied or dissatisfied with system and information quality. The use then has influence on the conduct of the work for the individual and this results in organizational impact (DeLone and McLean, 2003). A causal model studies the success dimensions to determine whether there are causal relationships between them. For example a higher system quality leads to higher satisfaction and higher use, leading to more impact on individual productivity and therefore a higher organizational productivity improvement.

process versus causal components as mentioned by Seddon (1997). The arrows indicate the process dimension; the causal dimensions have to be hypothesized per study.

Task Technology Fit Model

The Task-Technology Fit model (TTF) is used, mostly in situations in which the use of the Information System can be assumed, to explain the impact of IS on performance. It has been used in the Group Support Systems literature (e.g. Zigurs and Buckland, 1998; Fang et al., 2005; Dennis et al., 2001 provide a meta-analysis). The model shows that user performance is influenced by the fit between the tasks and the technology that is used and the individual characteristics, such as abilities and motivation (Klaus et al., 2003; Fuller and Dennis, 2004). Technology refers to computer systems and user support; tasks are "actions carried out by individuals in turning inputs into outputs" (Goodhue and Thompson, 1995; p. 216). It is obvious that systems must be used before they can have an impact on performance, which is usually the case for end-users in an organizational context (Wells et al., 2003) but use is based on other factors besides fit, not only in situations where the use is voluntary. The model is as follows (Goodhue and Thompson, 1995; Wells et al., 2003):
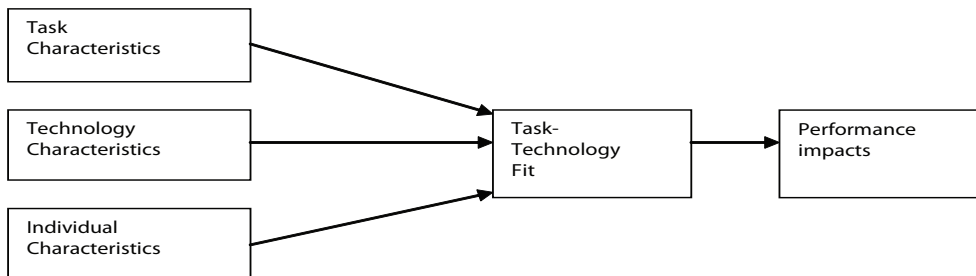
Figure 2.5 The Task Technology Fit Model (Goodhue and Thompson, 1995)

The model predicts that a higher fit leads to a higher utilization (Benslimane et al., 2003). Elements of the "utilization research" (e.g. the model of Fishbein and Ajzen) have been added to the model (Goodhue and Thompson, 1995; Goodhue, 1995) to include utilization, leading to the following updated model (Goodhue and Thompson, 1995; p. 217):
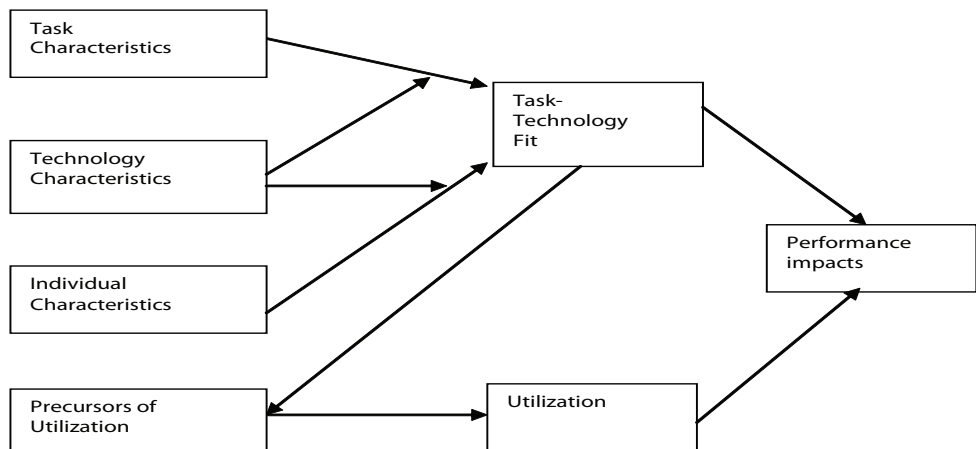
Figure 2.6 The updated TTF model (Goodhue and Thompson, 1995)

2.3   Media channel theories

Media Richness Theory

A widely known and used theory is the Media Richness theory, which has been used in explaining the use of new media (Dennis and Kinney, 1998). The theory has its origin in explaining why organizations process information. From the organization literature two answers are given: to reduce uncertainty and to reduce equivocality (Daft and Lengel, 1986; Lengel and Daft, 1988). Uncertainty can be seen as the absence of information or "the difference between the amount of information required to perform the task and the amount of information already possessed by the organization" (Galbraith, 1977; cited in Daft and Lengel, 1986; p. 556). This means that by gathering new data, the level of uncertainty can be reduced. Equivocality can be seen as confusion and lack of understanding; asking a simple yes-no question is not possible. This leads to the following framework (Daft and Lengel, 1986; p. 557):

EQUIVOCALITY	HIGH	*High equivocality, low uncertainty* Occasional ambiguous, unclear events, managers define questions, develop common grammar, gather opinions E.g.: Takeover of a competitor	*High equivocality, high uncertainty* Many ambiguous, unclear events, managers define questions, also seek answers, gather object data and exchange opinions E.g.: new product launch; rapid technological development
	LOW	*Low equivocality, low uncertainty* Clear, well defined situation, managers need few answers, gather routine objective data E.g.: using routine technology in a stable environment	*Low equivocality, high uncertainty* Many, well defined problems, managers ask many questions, seek explicitly answers, gather new, quantitative data E.g.: High turnover of personnel
		LOW HIGH	
		UNCERTAINTY	

Table 2.3 The Media Richness Theory Framework (Daft and Engel, 1986)

This leads to the design of organizational structures to cope with the needed amount of information (to reduce uncertainty) and the needed amount of richness of information (to reduce equivocality). Information richness is defined as "the ability of information to change understanding within a time interval" (Daft and Lengel, 1986; p 560). Media can be classified according to their richness (Daft and Lengel, 1986; p. 560; Lengel and Daft, 1988; p. 226):

Highest   Physical presence (face-to-face)
                 Interactive media (telephone, electronic media)
                 Personal static media (memos, letters, tailored computer reports)
Lowest   Impersonal static media (flyers, bulletins, generalized computer reports)

The framework has been used to study the use of communication media by managers, where the higher the equivocality, the higher the use of 'rich' media by managers. This can be explained by the fact that the higher the uncertainty, the more data is acquired. The higher the equivocality, the more exchange of subjective views among managers to define the problem(s) and resolve disagreements (Daft et al., 1987). Although the framework is attractive by its simple and intuitive construction to use it outside its initial application, the empirical results in its own domain have not been favorable (e.g. Rice and Shook, 1990; Ngwenyam and Lee, 1997; Carlson and Davis, 1998; Dennis et al., 2008). As it has been stated: "In other words: media richness theory has essentially been falsified multiple times" (Kock, 2009; p. 405).

Uses and Gratifications Theory

Another theory based on the use of media is the Uses and Gratifications theory (U&G). It has its roots in the beginning of mass communication research in the 1940s on radio quiz programs and soaps (Katz et al., 1973) and tries to explain the use of the media by the needs of consumers which lead to expectations about mass media and which lead to need gratifications. Five elements of the model are (Katz et al., 1973):

- The audience is active, which means goal directed when using the media.
- In linking the need gratification and media choice the initiative is with the audience member.
- The media compete with other sources of need satisfaction.
- Data about the reasons for using the media can be supplied by the people themselves; they are sufficiently self-aware of their reasons.
- "Value judgments about the cultural significance of mass communication should be suspended while audience orientations are explored on their own terms" (ibid., p. 511).

The theory can be seen as a reaction to the imbalance perceived in previous research where the audience needs were neglected and the aims of the communicators held a central position. The fact that it is based on consumer behavior makes it a potential theory (more than the theory of media richness with its origin in managerial communication) for the use of new ICT enabled channels and it is considered to be an "axiomatic" theory, which has been quite effective to understand the reasons of consumers to use the Internet (Ko et al., 2005; p. 58; Liang et al., 2006).

Stafford et al. (2004) state that U&G is best suited for understanding consumer technology use (compared to TAM, IDT). They distinguish three types of gratifications (pp. 266 – 268):

- content gratifications (e.g. information or entertainment); the messages carried by the medium);
- process gratifications (e.g. playing with technology, browsing; the actual use of the medium itself);
- social gratifications (e.g. interpersonal communication, social networking; the social environment of the medium).

2.4   Psychology theories

The Theory of Reasoned Action

The Theory of Reasoned Action (TRA) has been formulated in 1975 (Fishbein and Ajzen) and tries to predict behavior over which people have complete volitional control (Sheppard et al. 1988). The theory has been a dominant approach in explaining behavior in consumer research (Bagozzi et al., 1992; Foxall et al., 1998). In brief the theory explains future behavior by measuring the behavioral intentions; these intentions are predictable from attitudes toward the behavior and perceived normative expectations about reference groups and the individual's motivation to comply with those expectations (Herr, 1995). Subjective norm is defined as a "person's perception that most people who are important to him think he should or should not perform the behavior in question" (Fishbein and Ajzen, 1975, p. 302; Venkatesh et al. 2003; p. 428). Attitude toward behavior is defined as "an individual's positive or negative feelings (evaluative affect) about performing the target behavior" (Fishbein and Ajzen, 1975, p. 216). The model is as follows:
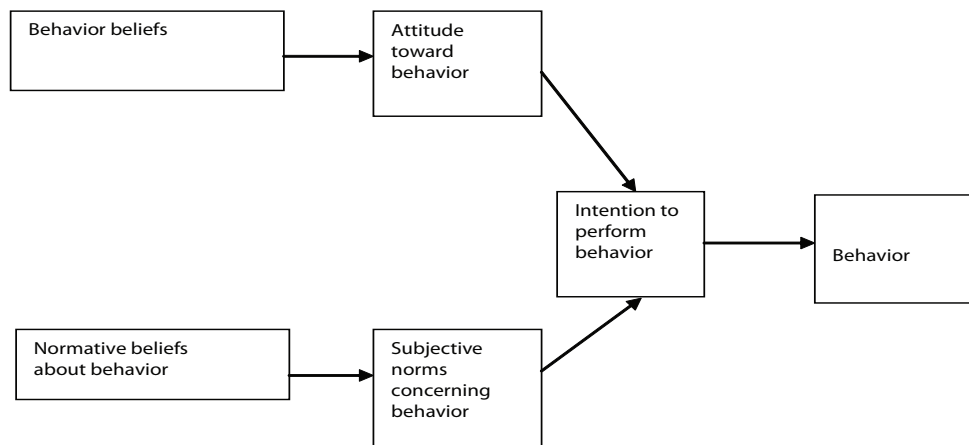
Figure 2.7 The Theory of Reasoned Action (Fishbein and Ajzen, 1975)

The model has certain assumptions:

• Rationality is the basis for decision making (Adamson and Shine, 2003); individuals make systematic use of information and evaluate the implications of their actions before acting (Verhagen, 2003). This is in line with the rational consumer decision making process, although the authors mention that beliefs and therewith attitude can be based on non rational and biased opinions (see Fishbein and Ajzen, 2010).
• There are no significant barriers to behavioral performance (Mathieson, 1991).
• The immediate determinant of a person's behavior is his/her intention to perform the behavior (Hartwick and Barki, 1994).[7]
• The intention is determined by the attitude and subjective norms, which are given a weight to reflect their relative importance (Hartwick and Barki, 1994)).
• Behavior beliefs underlie the attitude toward behavior (Ajzen and Fishbein, 1980).
• The principle of compatibility (Ajzen and Fishbein, 1977, 1997; Ajzen and Fishbein, 2005), which means that the measures of attitudes and behavior are about the same action, target, context and time elements.
• "External variables will be related to behavior only if they are related to one or more of the variables specified by our theory" (Ajzen and Fishbein, 1980, p. 82), which means they influence behavior indirectly through their influence on the terms of the model (attitude concerning behavior, on subjective norm or the relative weight of the two) (Hartwick and Barki, 1994), that is called the claim to sufficiency (Verhagen, 2003).
• Choosing among alternatives is not considered. Two possibilities have been proposed to include choice. According to the first possibility individuals form for every alternative an intention based on their attitudes and subjective norms for that alternative and choose the alternative with the strongest intention. The second possibility is that individuals compare their attitudes and subjective norms for each alternative and select the alternative with the most positive attitude and subjective norm and form an intention to perform that one alternative (Ajzen and Fishbein, 1980; Sheppard et al., 1988).

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7 Bagozzi and Warshaw (1990) reform this to intention to try and trying, differentiating between goals and behavior.

Ajzen and Fishbein include three types of external variables in their model (Verhagen, 2003; p. 38):

- demographic variables as age, gender, occupation, socio-economic status, education, religion;
- attitudes toward targets or objects, which are assumed to be positively related to the likelihood of behavior with respect to that object;
- personality traits, like lifestyle, introversion-extroversion.

By including the external variables the model is extended as follows (Ajzen and Fishbein, 1980; Eagly and Chaiken, 1993; p. 172):
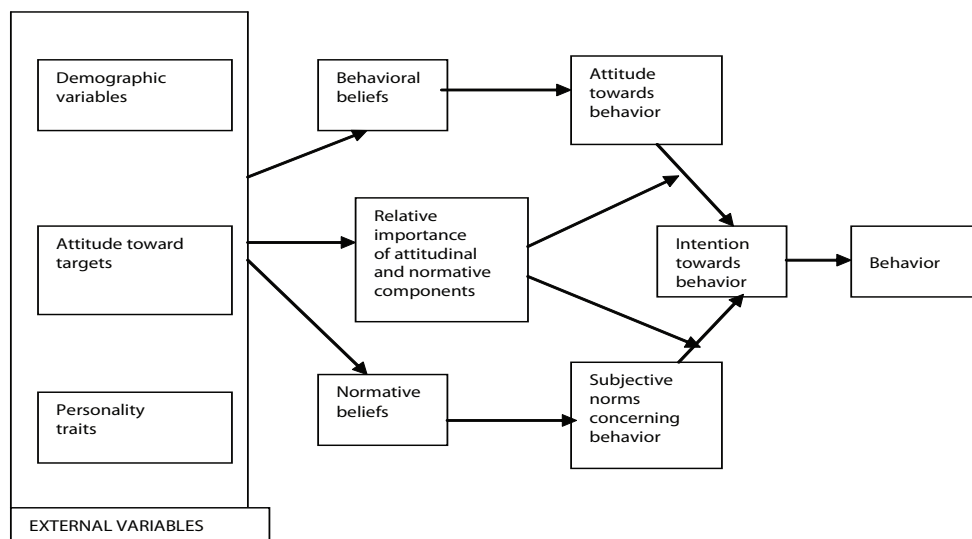
Figure 2.8 TRA extended with external variables (Ajzen and Fishbein, 1980)

As is shown in the figure, the influence of the external variables is through the beliefs and these external variables can influence the relative importance of the attitudinal and normative components, which might lead to a different intention towards behavior. The choice between two or more alternatives can also be predicted by comparing the relative strengths of the intentions per alternative with each other (Eagly and Chaiken, 1993). Then the model becomes very similar to subjective expected value and subjective expected utility models of decision making.

The Theory of Planned Behavior

The Theory of Planned Behavior (TPB) is an extension to the Theory of Reasoned Action and adds perceived behavior control (PBC) as an additional predictor of behavior intention, where perceived behavioral control is defined as the "person's belief as to how easy or difficult the performance of the behavior is likely to be" (Ajzen and Madden, 1986; p. 457; Wu, 2006; p. 986). This is composed of the perceived capability of performing the behavior (self efficacy) and the controllability of the behavior (Ajzen, 2002a, Ajzen, 2006; Pavlou and Fygenson, 2006).

The Theory of Planned Behavior is "one of the most influential and well supported social psychological theory" (Smith et al., 2008; p. 312) and has been used in a number of disciplines (Morris and

Venkatesh, 2000; Venkatesh et al., 2007). It explains most human behaviors and therefore can be applied to IT use. In a recent publication the authors name it the Reasoned Action Model (Fishbein and Ajzen, 2010).
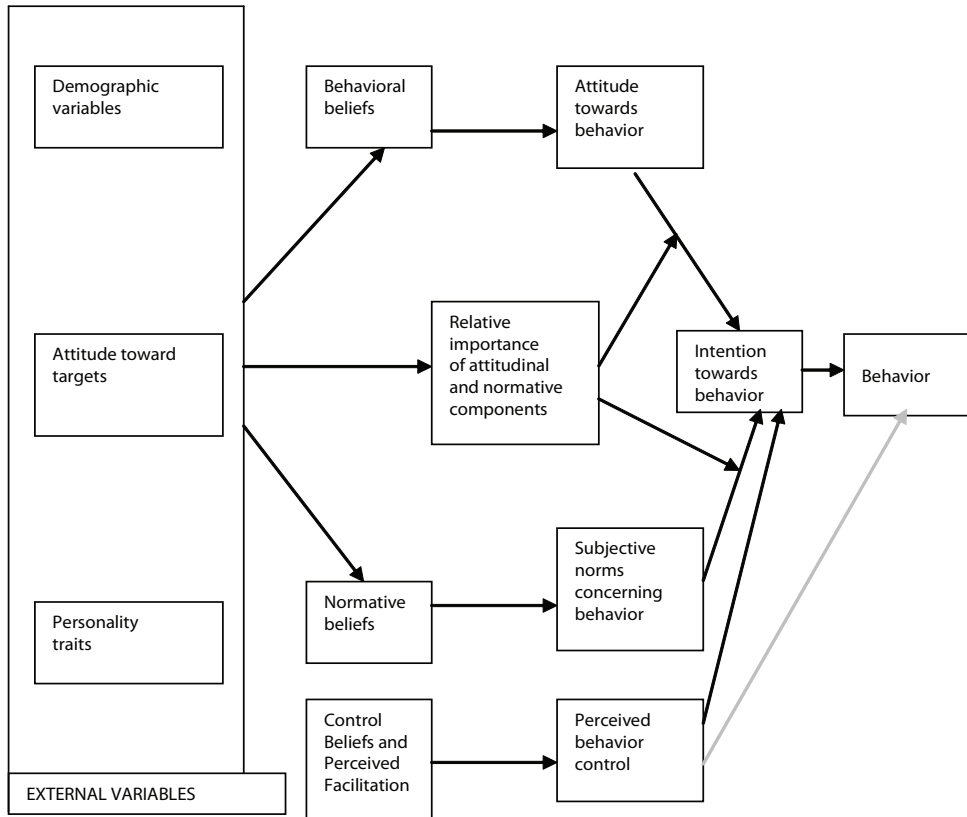
Figure 2.9 The Reasoned Action Model (Fishbein and Ajzen, 2010)

By adding Perceived Behavior Control the model accounts for situations in which the individual has no complete control (Chaiken and Stinger, 1987; Notani, 1998; Limayem and Hirt, 2003). Perceived behavior control plays a role in two ways: it is a co-determinant of intention (together with attitude and subjective norms) and together with intention it is a co-determinant of behavior (Pavlou and Fygenson, 2006; Mathieson, 1991; Taylor and Todd, 1995a; Notani, 1998; Ajzen and Madden, 1986; Ajzen, 1991). Besides its use for the explanation of e-Commerce, it has been extended to the adoption of technology within the household (Venkatesh and Brown, 2001; Brown and Venkatesh, 2005).

Social Cognitive Theory

The Social Cognitive Theory (SCT) is a widely used theory about an individual's behavior. It has been used for instance to explain music downloading (LaRose and Kim, 2007). Stated briefly it is based on the premises that environmental influences such as social pressures or unique situational characteristics, cognitive and other personal factors including personality as well as demographic characteristics, and behavior are reciprocally determined (Compeau and Higgins, 1995a, 1995b,

Compeau et al., 1999). In this so-called 'triadic reciprocal causation' (Bandura, 1986), behavior, personal factors (cognitive and others) and environmental events influence each other (Wood and Bandura, 1989; p. 362):
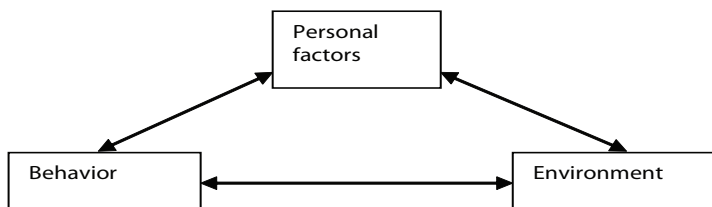
Figure 2.10 The Social Cognitive Theory (Wood and Bandura, 1989)

Social exchange theory

Social exchange theory has been used to explain long-term relationships in a variety of relationships and has been used in retailer-consumer relationships research (De Wulf et al., 2001, 2003; De Wulf and Odekerken, 2003; Odekerken et al., 2003). Stated simply people act (and stay in relationships) because they want to or they think they have to (Kim and Son, 2009); people are seen to be motivated by interests or rewards/punishments (Cook and Whitmeyer, 1992). It can be argued that the continued use of a channel is a long term relationship. Trust is related to the social exchange theory (e.g. Granovetter, 1985, 1992, 2005) and is based on the assumption that an exchange has an economic and social dimension (Nooteboom, 1996). Economists tend to ignore the value of the relationship itself, which is for several reasons valuable. Trust can be defined as a "cognitive 'leap' of faith beyond the expectations that reason and experience alone would warrant" (Young-Ybarra and Wiersema, 1999; p. 445) and trust is not the result of contracts but a different way of coordinating activities.

2.5   Marketing theories

Expectation Disconfirmation Theory

Research on post purchase processes has been important in marketing research as many purchase decisions are not initial decisions (Oliver, 1993). A large number of studies find that customer satisfaction leads to customer loyalty (Rust and Zahorik, 1993; Anderson et al., 1997; Aydin and Özer, 2006), although the link has been questioned (Reichheld, 1993, 1996; Neal, 1999; Jones and Sasser, 1995; Verhoef, 2003; Agustin and Singh, 2005; see Mittal and Kamkura, 2001, for differences based on consumer characteristics). Customer loyalty leads to improved company performance (Reichheld and Sasser, 1990; Rust and Zahorik, 1993; DeWitt and Brady, 2003; Homburg et al., 2005) and repeat customers are said to be a source of profit for any venture (Gupta and Kim, 2007), which might explain why the topic has regained substantial attention from management. The concept has been 'translated' to online customers (e.g. Reichheld and Schefter, 2000; Reichheld et al., 2000).

This has led to satisfaction research and has resulted in the Expectation Disconfirmation Theory.[8] Expectation Disconfirmation Theory (EDT) has been widely used in consumer behavior research (Churchill and Surprenant, 1982; Oliver, 1980, 1993, 2010; LaBarbera and Mazursky, 1983; Cadotte

8 Also called Expectation Confirmation Theory (Bhattacherjee, 2001a; Koppius et al., 2005) or Disconfirmation of expectations theory (Cadotte et al., 1987; Bhattacherjee, 2001a).

et al., 1987; Anderson and Sullivan, 1993; Patterson et al., 1997; Dabholkar et al., 2000; Venkatesh and Goyal, 2010) to study product repurchase and service continuance and has been the basis for research on service quality like the well known ServQual research (Parasuraman et al, 1985, 1988, 1990; Parasuraman and Grewal, 2000) that has been extended to research on E-service quality (Zeithaml et al, 2002; Parasuraman et al., 2005; Akinci et al., 2010) and has been used in retail setting as well (Finn and Lamb, 1991).

Based on the concept of Cognitive Dissonance (Festinger, 1957) it is gaining a place in the IS usage literature (Bhattacherjee and Premkumar, 2004). It has been noted that "Individuals' information systems (IS) continuous usage decisions are congruent with consumers' repeat purchase decisions. The expectancy-confirmation paradigm has been strongly confirmed across a wide range of product repurchase and service continuance contexts" (Kang et al., 2009; p. 111).

EDT can be seen as a two-stage model, where the expectation and attitude after the use of the product or service is caused by the expectation and attitude in the initial stage and the disconfirmation and satisfaction after use (Bhattacherjee and Premkumar, 2004). The steps are as follows (Swan and Trawick, 1981; Koppius et al., 2005; p. 320; Hong et al., 2006):

- Consumers form an initial expectation of a product or service before the purchase or use. This also applies for retail settings (Oliver, 1981).
- Consumers use the product/service and form perceptions about the performance.
- The perceived performance is assessed against the original expectation and it is determined to what extent the expectation is confirmed.
- Satisfied customers form a repurchase intention; dissatisfied customers discontinue the product/service.

Satisfaction is based on a comparison between performance and expectations (Sanchez-Garica et al., 2007) but there is also a psychological component as "satisfaction is defined as pleasurable fulfillment" (Oliver, 1999; p. 34). The notion of satisfaction being based on three antecedents - expectation, disconfirmation and perceived performance (McKinney et al. 2002) - resembles the much used concept of SERVQUAL, where satisfaction is based on the expectation and actual performance, although they differ on several aspects (Bhattacherjee, 2001a). EDT has a common basis in attitude formation. The beliefs a consumer has about a product (or channel) before consumption lead to expectations about the performance. These expectations can be seen as belief probabilities (Oliver, 1980). The actual use leads to (dis)confirmation that leads to new beliefs about the product (or channel), resulting in a favorable or not favorable attitude towards the product (or channel). It adds the dynamics to the attitude formation and offers explanations for a change in attitudes. EDT is also related to the typology of buying behavior. If customers are satisfied their repurchase decision might become routine problem solving: only evaluating one brand.

Switching behavior

Channel switching can be seen as service switching, as retail businesses are service businesses (Berry, 1986). Apart from explaining channel preferences among consumers, which is the main focus of this research, there might be some specific elements involved in service switching that add to explaining channel switching. Keaveney (1985) comes to eight categories for classifying reasons to switch in service industries: price, inconvenience, core service failure, response to failure, competition, ethical problems, involuntary and other. Switching behavior has been applied to online services as well (Keaveney and Parthasarathy, 2001).

Roos (1999) extends this Critical Incident Technique into a relationship direction by including actual behavior, resulting in the Switching Path Analysis Technique (SPAT), to explain switching decisions by consumers. SPAT views the customer relationship into a trigger, an initial stage, a process and a consequence (Roos, 2002). The trigger gives direction to the switching process without being a part of it. Three triggers are identified (Roos, 2002; Roos et al., 2004):

- situational trigger, which consists of a change outside of the relationship (e.g. demographic changes);
- influential trigger, where the service provider to which is switched serves as a standard for the consumer, e.g. when a new service provider enters the market;
- reactional trigger, which results from a change in the performance (or perceived performance) of the company from which is switched, e. g. a new computer systems that does not work.

The process of switching is the most visible part and three kinds of switching determinants can be distinguished (Roos, 1999; pp. 74 – 76; Roos, 2002; p. 198):

- pushing determinant, which is the determinant which is perceived by the customer as the reason for switching;
- the swayer, which can be negative of positive and which might speed up the switching decision or delay the switching decision;
- pulling determinants, which cause the customer to return to the service provider he/she has decided to switch.

2.6   Evaluation of the theories for multichannel purposes

After describing the potential relevant theories briefly, the next step is to evaluate them on their relevance for the sub question that has to be answered in this chapter:

- *Which theories can be used to find the factors that explain the trial, adoption and choice of an ICT enabled channel by customers in a multichannel configuration?*

The relevance of the theories for the research depends on the question to what extent the theories explain the elements of multichannel behavior. The elements that have to be explained are: trial, adoption (or continuous use) and choice between channels. The context is formed by the ICT component and the consumer component. In table 2.4 the theories are characterized on the relevance of the original theory in explaining these elements. For example the first theory, TAM, scores high on trial and high on ICT focus as it has been developed for the trial of a new IT system. As it has been developed within a working context, it scores low on consumer behavior. This classification does not mean the theory has not been used to explain the elements on which it scores low or is not suitable to explain this element; it only says it has not been developed for explaining this particular element. In building the model the usefulness of these theories regarding these elements will be discussed and based on their usefulness a choice will be made. The focus is here on the ICT related theories, following Pavlou and Fygenson (2006) who state that "overwhelming evidence suggests that IT-related variables have become at least as important as traditional factors in predicting consumer behavior on the Internet" (p. 133) and claim that "online consumers are simultaneously IT users" (p. 116). The importance of the ICT component is based on three unique dimensions of using an ICT enabled channel (Pavlou, 2003): the extensive use of technology, the distant and unpersonal nature of the channel and the uncertainty caused by using open technological infrastructure. The IS research is said to provide "rich theories and explanations of the determinants of adoption and use decisions" (Venkatesh and Bala, 2008; p. 274). This means that the theories that explain trial *and* have an ICT focus are preferred to the other theories.

	TRIAL	ADOPTION	CHOICE	ICT FOCUS	CONSUMER BEHAVIOR (ORIGIN OF THE THEORY)
TAM	++	+-	-	++	-
UTAUT	++	+-	-	++	-
IDT	++	+	-	+-	+-
DeLone&McLean	-	++	-	++	-
TTF	+-	+-	-	++	-
Media Richness	+-	+-	++	+-	- -
Uses & Gratification	++	-	-	+-	++
TRA	++	+-	-	- -	++
TPB	++	+-	-	- -	++
SCT	++	+-	-	- -	++
Social Exchange	- -	+-	+-	- -	++
EDT	- -	++	-	- -	++
Switching	- -	- -	++	- -	++

Table 2.4 Evaluation matrix of used theories

Explaining the trial of a new channel

The first step is to explain the trial of a new channel. The obvious first choice within the IS theories, based on the large number of articles, to start with is TAM. TAM's wide usage to explain customer behavior towards eCommerce and its fundamental origins in psychological theory make TAM more suitable as a starting point for research to explain the use of a new channel than a theory like TTF which has not received much attention to explain customer behavior in eCommerce. TAM seems also more suitable as a starting point than the Innovation Diffusion Theory (IDT). Although IDT is widely recognized as a general theory explaining the diffusion of all kinds of innovations, there is evidence that IT-related variables have become important (at least as important as traditional IDT factors) in predicting consumer behavior in relation to ICT enabled channels (Pavlou and Fygenson 2006). Furthermore some factors in IDT resemble factors in TAM. Relative advantage is analogous to the perceived usefulness construct in TAM and IDT's complexity is analogous to TAM's ease of use (Taylor and Todd 1995a; Karahanna and Straub 1999; Wu and Wang 2005; Gerpott, 2011), it "parallels perceived ease of use quite closely" (Davis, 1989; p 322).

An alternative in the IS theories for TAM is UTAUT that can be seen as an extension of TAM. Although the model tackles a number of the weaknesses of TAM, that will be revealed in chapter 3, there are several reasons for not using UTAUT. First of all it has been developed for the use of technology in the working place (Stafford et al., 2004), which becomes clear with the definition of the construct performance expectancy: "the degree to which an individual believes that using the system will help him or her to attain gains in job performance" (Venkatesh et al., 2003; p. 447). A second, more important reason, is the fact that the model consists of 41 independent variables for predicting intentions and eight independent variables for predicting behavior (Bagozzi, 2007). Although this

will cause problems in testing the model, it is even more complicated: "arguments can be made that important independent variables have been left out, because few of the included predictors are fundamental, generic, or universal…." (Bagozzi, 2007; p. 245). An example has been given by Jasperson et al. (2005) who extend UTAUT with three extensions and Chiu and Wang (2008) who extend UTAUT with subjective task value; recently UTAUT has been extended into UTAUT2 (Venkatesh et al., 2012). It has been stated that UTAUT has only contributed to theoretical confusion (Straub and Burton-Jones, 2007). A third reason that is probably related to the former two is the lack of applications in the field of eCommerce.

The choice for TAM can be founded by three arguments: impact, present relevance and results. First the impact of TAM in the IS literature is without any doubt (Chin et al., 2008). Lee et al. (2003) calculate that (at the time of their review) TAM studies occupy about 10% of the total publications in the IS field. The articles that introduced TAM into the academic field (Davis, 1989; Davis et al., 1989) are cited often in the relevant literature (Venkatesh and Davis, 2000; Lee et al., 2003); for instance Brown et al. (2008) mention 1000 citations for the two articles; Hsiao and Yang (2010) mention nearly 2000 citations for Davis' 1989 article. TAM "has come to be one of the most widely used models in IS, in part because of its understandability and simplicity" (King and He 2006; p. 740), has become widely accepted (Sun and Zhang 2004; Calantone et al., 2006) and "is seen as the most influential and widely discussed theory in predicting and explaining the end-user behavior and system use" (Ahn et al., 2004; p. 407). It has "come to occupy a central position in research focused on individual adoption of IT innovations" (Lucas et al., 2007; p. 206) and some consider it "the only well-recognized theory in IS" (Benbasat and Barki 2007; p. 212). Since the growth of the Internet as a distribution channel and the shift in emphasis of many IS studies towards electronic commerce issues, TAM has been widely used to explain customer behavior towards electronic channels (e.g. O'Cass and Fenech, 2003; Perea et al., 2004; Barkhi et al., 2008; Baier and Stüber, 2010; Yang et al., 2010; Al-Gahtani, 2011; Hsiao and Yang, 2011). It can be seen as a multi-attribute model of technology (Stafford et al., 2004; McKechnie et al., 2006).

The second argument, present relevance, is based on the fact that TAM is still used in recent articles to cover a variety of topics as intention to upgrade mobile phones (Tseng and Lo, 2011), acceptance of digital multimedia broadcasting (Shin, 2009), mobile payment services (Schierz et al, 2010), shopping on social networking web sites (Cha, 2009), fashion technology (Tzou and Lu, 2009), online health care (Jung and Berthon, 2009), hotel front office systems (Kim et al, 2008) and e-banking services (Lévy et al., 2011, 2012).

Thirdly the results of TAM in explaining the use of the Internet as a channel for purchasing goods and services are also in favor of TAM. Koufaris (2002) finds that the Technology Acceptance Model can be applied to consumer behavior regarding the use of the Internet, even when the behavior is not one of pure system usage. The perceived usefulness explains 49% of variance of intention to return and is found a more important predictor of intended system usage than perceived ease of use. This is confirmed by a survey of Pavlou (2003), who finds that perceived ease of use has a non-significant effect on intentions to transact, although in another survey it is found that both variables were of influence in predicting behavior[9]. Devaraj et al. (2002) and Klaus et al. (2003) find similar results. Ahn et al. (2004) also come to the conclusion that TAM explains the individual's attitude toward the use of the Internet, where the usefulness is more strongly linked to the intention to use than the ease of use while the ease of use exerts a significant effect on the usefulness. This means that usefulness is the number one factor; the easier the more useful it is perceived to be. The usefulness of a website is influenced by the perceived quality, which is subjective and might be related to the user's skills.

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9 In this survey two other factors have been reviewed: trust and perceived risk. Trust also acts as an indirect antecedent through perceived risk, perceived usefulness and perceived ease of use.

Soopramanien et al. (2007) come to the conclusion that "with the continuous growth of Internet use and adoption, Internet shopping specific factors offer better explanation of online shopping adoption and usage than socio-economic factors as opposed to the effect of these variables on the adoption and usage of Internet shopping" (p. 81).

TAM can be used to explain this part of multichannel behaviour as consumers in an online transaction process use technologies and therefore "it is justifiable to consider the variables of the technology acceptance model in predicting intentions to use Internet technology for on-line transactions" (Pavlou, 2003; pp. 107, 108). To this it can be added that one of TAM's greatest strengths is its "generalizability across a wide range of technologies and settings over several years" (Venkatesh, 2006; p. 498), which makes it very suitable; not only to explain the use of present technological channels but also to explain the use of future technological channels. Using TAM to explain the trial of a new ICT enabled channel implies that this channel is perceived as useful and easy to use. The higher the scores on these two constructs, the more favorable the attitude towards this channel will be. A more favorable attitude will lead to a higher intention to use.

Continuous use of a channel

Adoption or continuous use is the second element that has to be explained by the model. IS continuance has received less attention than IS trial and has been called immature (Larsen et al., 2009). Continuous use can be explained by TAM to some extent by conceptualizing two consecutive TAM models, where users form the TAM constructs (PEOU, PU and INT) anew every time they have to decide about channel use. "TAM, which was originally designed to understand users' behavior at the initial adoption stage of an IT, may extend its application to the understanding of continued usage behavior of experienced users" (Hong et al., 2006; p. 1828) and it has been used to study post-adoption use (Premkumar and Bhattacherjee, 2008) in numerous studies (e.g. Davis et al., 1989; Karahanna et al, 1999; Venkatesh and Brown, 2000; Venkatesh and Davis, 2000). These studies use however the same variables to explain acceptance and continuous use (Bhattarcherjee, 2001a, p. 352):

> "….these studies view continuance as an extension of acceptance behavior (i.e., they employ the same set of pre-acceptance and continuance decisions), implicitly assume that continuance co-varies with acceptance (….), and are, therefore, unable to explain why some users discontinue IS use after accepting it initially…(..) In sum, current acceptance models provide a limited explanation of, and may sometimes contradict, observed continuance behaviors".

Those longitudinal studies suggest temporal changes in TAM constructs but are not able to explain them (Bhattacherjee and Premkumar, 2004). It has been argued (Tsai and Huang, 2007; p. 231) that TAM offers "limited explanations for why customers remain with a particular e-tailer". A more general argument is given by Mallat (2007; p. 428):

> "The traditional technology adoption models, however, are based on the assumption that new technologies are introduced to replace the old ones (….). Our findings suggest the need for a more dynamic adoption model that is able to describe the adoption of mobile payments that complement existing payments and are preferred under certain conditions".

It implies that "reasoned action models such as TAM and its variants are probably not the most useful theoretical foundations for studies of continuing IT use, however valuable they may be for understanding initial IT adoption decisions and technology replacement decisions" (Ortiz de Guinea and Markus, 2009; p. 441). The question has been raised whether the variables that explain acceptance are the same as the variables that explain continued use and referring to the cognitive

dissonance theory the answer has been (implicitly) negative (Cho et al., 2009; Kim and Oh, 2011). It is obvious that for explaining the continuous use of a channel, past behavior has to be included as well, as has been demonstrated (Wixam and Todd, 2005; Kim and Lee, 2008; Kim and Son, 2009; Kim, 2011).

A first alternative choice – while remaining in the IS academic field - to explain continuous use of an ICT application (like an electronic channel) appears to be the DeLone and McLean's IS Success Model. The model has been adjusted recently to measure eCommerce success as well (DeLone and McLean 2003), although it has not been validated in this field of research (Wang, 2008). One of the shortcomings of the model however is that user satisfaction itself doesn't predict system usage satisfactorily (DeLone and McLean 1992; Wixam and Todd 2005), which is related to the paradox in consumer research in which it has been found that satisfied customers may defect (Jones and Sasser 1995; Reichheld 1996). Alternative explanations for this part of multichannel behavior have therefore to be found outside the IS literature.

A suitable theory for explaining continuous use is the Expectation Disconfirmation Theory (EDT), where satisfaction is related to three antecedents: expectation, disconfirmation and perceived performance. The continuous use of Information Systems is of crucial importance for the eventual success of an Information System. This notion derives from the marketing theory, where the importance of keeping customers is evident. Market share is based on getting new customers and (even more) keeping customers. The costs of acquiring new customers are supposed to be five to seven times that of keeping the existing customers (Khalifa and Liu, 2005) and customer retention "is a major challenge in Internet-based services particularly, as customers can easily switch from one service provider to another at low cost" (Khalifa and Liu, 2003; p. 207). IS continuance is seen as central to the survival of many eCommerce firms (Bhattacherjee, 2001a). It has been studied in IS research, where the existence of a post-acceptance stage has been acknowledged; a stage in which IS use becomes part of normal routine behavior. In innovation diffusion theory the five stage adoption decision process (knowledge, persuasion, decision, implementation and confirmation phases) also implies that adopters reevaluate their acceptance decision.

The relevance of EDT for explaining technology acceptance has been demonstrated. Studies (Bhattacherjee 2001a, 2001b) confirm that the constructs of satisfaction and perceived usefulness are strong predictors of the intention to continue online services; satisfaction is also found to influence the use of channels (Kim and Lee, 2003). The TAM constructs PU, PEOU, attitude towards using and behavioral intention to use can be seen as what is seen as expectation in EDT. Extending TAM with the EDT constructs performance evaluation and satisfaction results in a more dynamic model in which both the trial and adoption of channels are included. When it comes to permanent choice between channels, this model takes into account that confirmation of channel expectations might lead to repeated use of a channel, while disconfirmation might lead to the opposite. EDT provides some explanation for permanent choice between channels as well. Using EDT is "similar in spirit to Davis et al.'s formulation of the technology acceptance model (TAM) in that it adapts EDT from the consumer behavior literature to propose a model of IS continuance, just as TAM adapted the theory from the social psychology literature to postulate a model of IS acceptance" (Bhattacherjee, 2001a; p. 352). The introduction of EDT in technology adoption research is seen as "a key step in furthering our understanding of continued IS use" (Venkatesh and Goyal, 2010; p. 284).

Combining TAM and EDT leads to an explanation for the trial and continuous use according to the following reasoning. Based on the perceived usefulness and perceived ease of use of a new ICT enabled channel, this channel will be used. If the new channel is used, the (dis)confirmation of the PU and PEOU will lead to (dis)satisfaction of the new channel on these constructs, which will lead to either adoption (continuous use) or rejection of the new channel. This combination of theories does

not explain the choice processes involved in multichannel behavior. If TAM is correct it means that all channels are evaluated on perceived usefulness and perceived ease of use. TAM does not explain how a choice is made after that. Does one choose the channel with the highest perceived usefulness or ease of use, or a combination? Does one need a certain minimum score on both constructs? Answers to these questions are crucial to build the model.

The choice between channels

As can be seen in table 2.4 explaining choice is not the focus of the IS theories. Most TAM based research (e.g. Bhattacherjee and Harris, 2009; Kowatsch and Maass, 2010; Cha, 20011, 2012) is about either using or not using IS. The choice between several options is not included in these adoption studies. Choosing among alternatives is an element of multichannel behavior that is not a part of TAM (Sheppard et al., 1988; Mallat, 2007). This means the model has to be expanded with constructs that include the choice between channels; not only explaining the actual choice but also explaining which channels are considered.

To remain as closely as possible to the IS field, the media channel theories are a first choice as they are in general suitable for explaining choice. The theory of Uses and Gratifications has been used for explaining the use of the Internet (e.g. Song et al., 2004; Stafford et al, 2004; Ko et al., 2005; Kink and Hess, 2008; Luo et al., 2011). It has been a model of consumer choice of new media innovations and is seen by some as more suitable than TAM (and the Unified Model) to study consumer behavior because those models are meant for explaining technology use in a work environment (Stafford et al., 2004). However, the used constructs add little to the already used constructs from other theories. The research seems more oriented towards the communicative applications of the Internet than towards the transactional purposes, which is, given the origin of the theory, no surprise.

Information richness has been used, as stated before, to study the use of communication media by managers, where the higher the equivocality, the higher the use of 'rich' media by managers. This can be explained by the fact that the higher the uncertainty, the more data is acquired. The higher the equivocality, the more exchange of subjective views among managers is needed to define the problem(s) and resolve disagreements (Daft et al., 1987). Although the framework is attractive by its simple and intuitive construction to use it outside its initial application (e.g. Evans and Wuster, 1997, 2000; Wuster and Evans, 1999; Dennis and Kinney, 1998; Qiu and Benbasat, 2005), the empirical results in its own domain have not been favorable (e.g. Rice and Shook, 1990; Carlson and Zmud, 1994, 1999; Ngwenyam and Lee, 1997; Carlson and Davis, 1998). Otondo et al. (2008; p. 29) come, from a survey among students regarding the choice of the Navy as an employer, to two conclusions:

> "First, the notions of media and information richness oversimplify the complex relationships between media, message, and receiver-based communications outcomes. The second is that media richness is a poor predictor of the effects of media type on communications outcomes and media richness, due to its non-monotonic nature across media types, and the weak relationships between media type and media features".

Kock (2009) sums it up: "In other words, media richness theory has essentially been falsified multiple times" (p. 405) and it has been said that it has a poor track record with newer media, like voice mail, e-mail (Kahai and Cooper, 2003).

That leaves the theory about switching behavior as a potential solution. However, the constructs used in this theory are related to the reasons that cause consumers to switch between different suppliers and are mostly formulated in terms of dissatisfaction with the present supplier. This is illustrated by

Kim et al. (2006), who state that customer satisfaction should lead to increased customer loyalty and thus service continuation, which means that customer satisfaction is an obstacle for service switching. Other elements are the attractiveness of the alternatives and the perceived switching costs. The attractiveness of the alternatives is of course related to the existing service: the theory describes the process of switching but not the process of choosing.

This means the review of theories has to be expanded beyond the theories used in the eCommerce and Internet surveys. TAM and EDT explain on an abstract level why a new channel is tried and adopted; the theories provide no insight in the consumer decision making process. It is not clear in TAM how consumers choose between two channels. A number of questions remains. How do they evaluate the scores on perceived usefulness and perceived ease of use of the channels? What, if any, rules do they apply to choose? The same comments can be made about EDT. What kind of dissatisfaction leads to a different choice the next time; can dissatisfaction be compensated with satisfaction on other points; how is this related to perceived usefulness and ease of use? The focus should be on the choice process. The process of choosing a channel is similar to the choice of a brand or provider (Blackwell et al., 2003) as it has been argued that in choosing a channel, consumers prefer the channel with the highest utility, which is a function of the attributes (Soopramanien et al., 2007). Therefore in building a general model for the use of ICT channels, the decision making models and choice models can be used. Decision making has roots in economics, psychology, marketing, statistics, political science, game theory, sociology (Rapoport and Wallsten, 1972; Slovic et al., 1977; Tallman and Gray, 1990; Tybout and Artz, 1994). In reviewing the literature on consumer decision making two main academic streams can be distinguished: economics (behavioral decision theory) and psychology. The third strand in which consumer behavior is researched, academic marketing, can be seen as an application area and not a separate discipline (Foxall, 2007); psychology and economics are said to underlie marketing (Ho et al., 2000a, 2006b). The theories that might explain consumer choice will be discussed in the next paragraph.

2.7 Consumer decision making

Theories about decision making go back to Blaise Pascal (1623 - 1662)[10] and the utility concept of Daniel Bernoulli (1700 – 1782). Von Neuman and Morgenstern (1947/2004) have brought the concept in economics with their development of a theory of games (Lopes, 1994) and made utility respectable in economics and a scientific concept (Von Wernerfeldt and Edwards, 1986; Fishburn, 1991; Goldstein and Hogarth, 1997); it also resulted in psychologists becoming interested in utility theory (Baron, 1988). Von Neumann and Morgenstern have introduced the principle of maximizing expected utility; Savage (1954) and especially Edwards (1954) have taken this further into the notion of subjective utility. If there is no uncertainty about the outcome, the outcome with the highest utility is chosen; under uncertainty the outcome with the highest subjective expected utility (SEU) is chosen (Edwards, 1961; Edwards and Fasolo, 2001). Maximization of the subjective expected utility is the most common and useful decision rule and has been seen as a descriptive (what do people do) model (Edwards, 1962) as well as a normative model (what people ought to do)[11]. It is said to be normative because in the long run it will give the best results (Baron, 1988). SEU can be defined as (Edwards and Fasolo, 2001):

SEU (Xj) = Σ [Wk Uk (Xj)]
Wk is the weight of the Kth attribute; Uk is the utility of the option on the Kth attribute. The sum of the weights is 1.

10 A rather interesting rational choice problem (Pascal's wager): does it make sense to believe in God.

11 The distinction between normative and descriptive models is quite common in the literature, e.g.: Wright, 1975; Abelson and Levi, 1985; Thaler, 2000; Newell et al., 2007.

Applying this to the choice of a channel, the model can be explained as follows. The consumer evaluates the channel on the relevant attributes. These attributes can be seen as characteristics of a channel, that are important in deciding which channel to use. These attributes are, according to TAM, perceived usefulness and perceived ease of use. Both attributes have a weight that might differ per consumer. Some consumers attach a higher weight to usefulness, other consumers attach a higher weight to ease of use. The consumer then chooses the channel with the highest subjective expected utility. The model has been criticized in many surveys (see for an overview Slovic et al. 1977) but can be seen as the founding model for many theories about decision making in economics and psychology. It is said to be frequently used as a normative standard against which other decision making strategies are evaluated (Zebras and Wang, 2009); the descriptive failure has been recognized (e.g. Luce, 1986, 1990) but the applied usefulness is high (Luce and Von Winterfed, 1994). If instead of SEU the attitude is taken, the model has been reformulated as Fishbein's expectancy value model (Etter, 1975; Fishbein and Ajzen, 1975; Huber and Leone, 1979). This means that economics and psychology (and therefore marketing) share a common model to explain consumer decision making. From this model new theories have been derived, that are summarized in figure 2.11. To include the choice between channels, three steps are taken. First the theories in the three academic fields are described briefly. Secondly the relevance of these theories for explaining multichannel behavior is reviewed. Finally, based on this review, a choice is made for a decision making model.
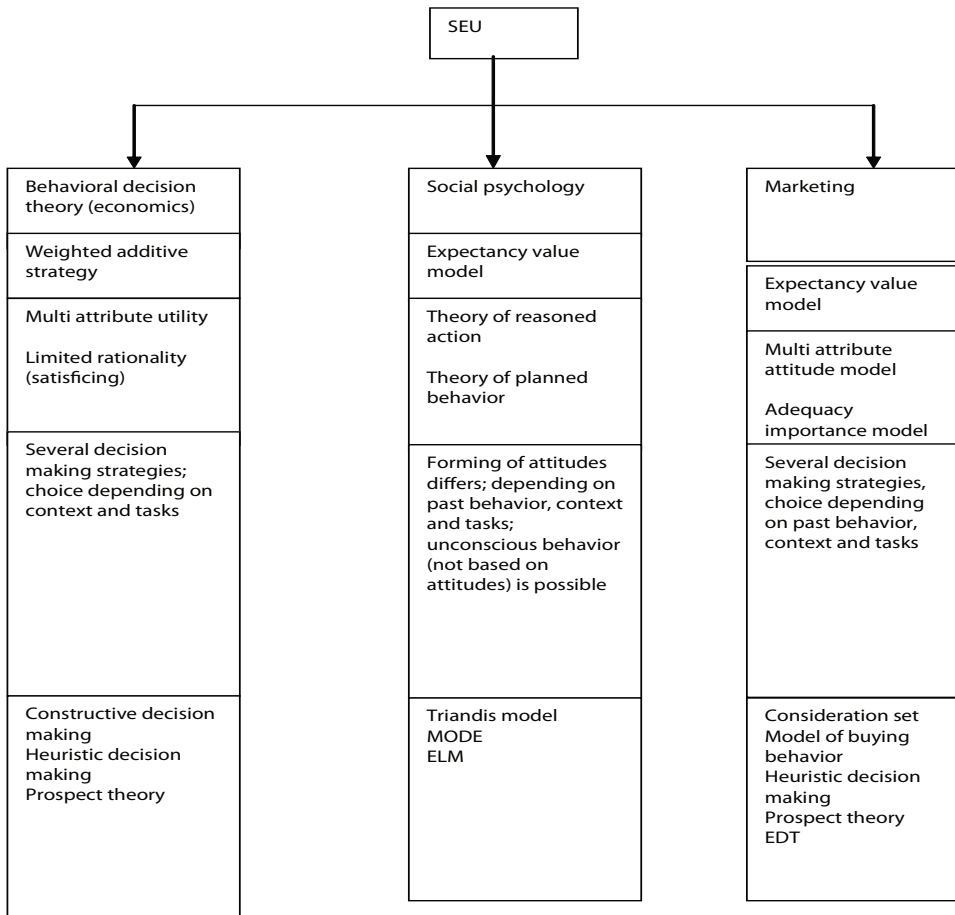
Figure 2.11 The development of decision making theories

Behavioral decision theory

Abelson and Levi (1985) distinguish between structural models and process models. Structural models discuss what is chosen; process models discuss how choices are made. This distinction between structural and process models is used more often (e.g. Svenson, 2006) and is followed here as well.

Process models

The process models – answering the question how – start with the SEU model. This model has been 'translated' into the weighted additive strategy: the consumer judges the alternatives on the attributes and weights these judgments by the importance of the attribute. The relative importance is multiplied by the value and the products are summed; the alternative with the highest overall summed evaluation is selected, which makes it a maximizing strategy (Payne and Bettman, 2004). This maximizing strategy has been first doubted by Simon (1955) with the concept of bounded rationality and the associated satisficing strategy. Due to limited capacity consumers use a heuristic (simplifying) strategy when faced with decision problems with a complex decision task (Payne et al., 1993). A large number of these heuristics have since then been noted. Usually two different evaluation strategies are distinguished: non compensatory and compensatory strategies (e.g. Wright, 1975; Payne et al., 1993; Blackwell et al., 2001; Chernev, 2007; Yee et al, 2007; Wang and Benbaset, 2009):

1. Compensatory evaluation strategies, where a weakness on one attribute can be compensated by a strength on another attribute:

- Weighted additive: the consumer judges the alternatives on the attributes and weights these judgments by the importance of the attribute. The relative importance is multiplied by the value and the products are summed; the alternative with the highest overall summed evaluation is selected, which makes it a maximizing strategy (Payne and Bettman, 2004). This strategy is similar to SEU.
- Equal weight: the values for each alternative are simply added and not weighted by importance (Bettman et al., 1991).
- Simple additive: the alternative with the largest number of positive attributes is chosen as the consumer simply counts the number of times an alternative is judged favorably on an attribute.

2. Non compensatory evaluation strategies, where a weakness on one attribute cannot be compensated by a strong performance on another attribute (Wilkie and Pessemier, 1973; Payne et al., 1997; Blackwell et al, 2001; Payne and Bettman, 2004):

- Lexicographic strategy: alternatives are compared initially on the most important attribute; the alternative with the highest perceived score on that attribute is chosen. If two alternatives are perceived as equally good, the alternatives are compared on the second most important attribute. This strategy might be chosen in a situation in which there is a large difference between the weights; it will give fairly high levels of accuracy and will limit the necessary effort.
- Elimination by aspects strategy: alternatives are (like lexicographic strategy) first evaluated on the most important attribute[12], but in this strategy a cutoff is used (alternatives must meet

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12 Tversky assumes the attributes are selected by a probabilistic procedure, where the probability that an attribute is chosen depends on the importance of the attribute (Batsell and Polking, 1985; Payne et al. 1993; Chrzan and Malcom, 2009). The procedure in which the attributes are selected based on their importance scores (first the most important) has been called DEBA: Deterministic EBA (Hogarth and Karelaia, 2005).

the cutoffs). If two alternatives meet the cutoff on the most important attribute, they are evaluated on the second most important attribute (cf. Slovic et al., 1977; Gilbride and Allenby, 2006).

• Disjunctive (or maximax) strategy: alternatives are compared on their best attribute and the alternative with the highest score on its best attribute is chosen.

• The minimax strategy: alternatives should be judged on their weakest component; the alternative with the strongest weakest component being chosen (Shugan, 1980).

• Conjunctive strategy: each alternative is compared against a set of cutoffs for all important attributes. So the consumer inspects all alternatives on the first attribute, then the alternatives that pass the cutoff level on the second attribute and so on. Only the alternative that meets the cutoffs for all the attributes is chosen (Grether and Wilde, 1984). An alternative strategy is cutoff by brand, where the consumers pick a brand and evaluate the brand on all the attributes. If it does not pass the cutoff on any alternative, the next brand is chosen to evaluate (Sethuraman et al., 1994).

• Satisficing (Simon, 1955, 1956, 1957): considering one alternative at a time. Each attribute of the alternative is compared to the cutoff value; if it is under the value the alternative is rejected and the next is evaluated. If it satisfies all attributes, it is chosen, without considering the remaining alternatives (Payne et al., 1988; Edwards and Fasolo, 2001).

• Majority of confirming dimensions: pairs of alternatives are compared on each attribute; the alternative with the highest scores is then compared with the next alternative and so on (Bettman et al., 1991).

• Frequency of good and bad features: consumers evaluate good and bad features compared to a cutoff level and simply count them. Might be on good or bad or both features (Bettman et al., 1991).

In explaining how people decide how to decide Payne et al. (1993) use an effort-accuracy framework that is based on five assumptions:

• people have several strategies available for solving decision problems of any complexity; this set might be based on training, learning, experience;

• the available strategies have different advantages and disadvantages with respect to the goals and constraints of the decision problem;

• a difference in task will affect the advantages and disadvantages of the strategies;

• people select the strategy that they think is best for the task;

• the choice of the strategy is top-down: first information of the task is used to determine the advantages and disadvantages of the various strategies; then the best strategy as a form of multi attribute choice is chosen.[13]

In general the use of a strategy is often explained in terms of cost/benefit or effort/accuracy tradeoffs (Shugan, 1980; Tybout and Artz, 1994; Payne et al., 1993; Payne et al., 1996; Payne et al., 1997; Bettman et al., 2008). Consumers have to compromise between the optimal decision and the strains of decision making (Wright, 1975). This line of thought can be traced back to Stigler (1961) who argues that buyers inform themselves up to the point where the costs of acquiring the

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13 Contrary to this top-down is the notion of constructive choice processes in which the strategy is developed and chosen at the moment of the actual choice. This method might be chosen if one has no prior experience and/or the decision problems are complex and/or stressful. Some research found that consumers use this method in 25% of the choices (Payne et al., 1993), which seems reasonable as consumers often encounter familiar decision making problems (compared to the experimental settings in research). Hoefler and Ariely (1999) phrase it as follows: "when consumers first enter a category they will probably need to construct their choices, due to lack of experience in this domain. However as experience is gained in a domain, preferences will stabilize" (p. 116).

information equals or exceeds the returns (Urbany, 1986; Kim and Lee, 2008; Huang et al., 2009). If the goal is to come to "good enough" choices, strategies that minimize efforts are employed (Tybout and Arts, 1994).

The difficulty of the choice depends on the alternatives, value of attributes and uncertainties. It will be more difficult as the number of alternatives and attributes increases, or if there is a great deal of uncertainty about the values of many attributes, or if the alternatives have little attributes in common (Bettman et al., 1991). The same applies to situations in which more than one alternative is chosen (Abdul-Muhmin, 1999) or when a choice between noncomparable alternatives, for instance a holiday or a new TV, has to be made (Johnson, 1984). To decide which strategy is used, it is stated that when there are not many alternatives (two to three), usually a strategy is used in which all relevant information is used to decide and a compensatory strategy is used, like for instance the weighted additive (Payne et al., 1993; Moe, 2006). Not only the number of alternatives (properties of the decision tasks) is important, also the characteristics of the decision maker (like knowledge, ability, motivation) play a role in selecting the strategy (Beach and Mitchell, 1978) as well as the social context.

Structural models

The structural - answering the question: what - perspective is found in Kahneman and Tversky's prospect theory, which is said to be an alternative to the expected utility theory (Thaler, 1985). Kahneman and Tversky have connected economics and psychology in what has been called behavioral economics (e.g. Ho et al., 2006b; Johnson, 2006; Politser, 2008; Heukelom, 2009). Based on Simon's bounded rationality they have attempted to create a map of bounded rationality. Their work consists of three programs. In the first they explore the way in which people decide and the biases in their decision making, in the second they develop the prospect theory and in the third they research the framing effects (Kahneman, 2003). This approach is based on the outcomes (what) of choices and by analyzing the outcomes the heuristics can be revealed (Havery, 2007).

The prospect theory (see for e.g. Kahneman and Tversky, 1979; Kahneman et al, 1991; Tversky and Kahneman, 1991; Kahneman, 2003; Kahneman and Thaler, 2006) is a perceptual framework (Corstjens and Gautschi, 1983; Payne et al. 1984). In the initial phase a problem is edited by for instance coding and cancellation (Payne et al., 1984). Coding refers to coding the outcomes as gains/losses or the removal of dominated alternatives. Cancellation is the removal of similar components in both gambles (Payne et al., 1984). In this stage context effects are important, the editing depends on the context (Payne et al., 1992b). As one editing rule has been mentioned that "people edit the outcomes in the way that makes them happiest" (Thaler and Johnson, 1990; p. 644). It has deeply influenced the theory of decision making as it predicts risk aversion for gains and risk seeking for losses (Lopes, 1994). Risk aversion for gains and risk seeking for losses has been found in numerous research; loss aversion is a robust finding in decision behavior research (Luce et al., 2000a; Cai and Xu, 2008)[14]. Tversky and Simonson (1993) propose the componential context model (CMM) that is specified as follows:

$$Vb \ (x,S) = \Sigma \ \text{ß}i \ Vi \ (Xi) + \emptyset \ \Sigma R \ (x,y)$$

Vb (x,S) is the value of option x given a choice set S and background context B, ßi is the weight of the attribute i, Vi (Xi) is the utility of the value xi of option x on attribute i, R (x,y) is the relative advantage of option x over option y, and Ø is the weight given to the relative advantage component of the model).

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14 It has even been used for explaining the participation rate in a survey (Torunageau and Ye, 2009).

If we compare these two approaches (process and structural models) they have, albeit their differences, a lot in common. In process models the choice of a strategy (how to decide) depends on task and context effects. In structural models the choice can be explained by task and context effects as well. Task variables are related to the characteristics of the decision problem; context variables are related to the values of the objects (Johnson and Payne, 1985). As relevant tasks effects are mentioned (Payne et al., 1993):

- Task complexity: number of alternatives; number of attributes; time pressure, perceived risk. High task complexity leads to simplifying the choice process, although perceived risk plays a role (Tybout and Artz 1994).
- Response mode: research shows that with variations in the response mode reversals in preferences are possible, which violates the principle of procedure invariance in the rational choice decision theory. This is largely based on research by Tversky and Kahneman.
- Information display.
- Agenda effects.

As relevant context variables have been mentioned (Payne et al., 1993):

- similarity of alternatives: asymmetric dominance effect; attribute range effect; correlated attributes (see e.g. Chernev, 2005);
- quality of the option set;
- reference point set;
- framing effects.

This brief overview of the field of behavioral economics shows that since the SEU a large number of alternative decision making strategies has been 'discovered'.[15] The relevance of these behavioral economics decision making strategies for multichannel behavior is evident. Before evaluating their usefulness for the building of the model, the theories in the remaining two academic fields, psychology and marketing, will be described.

Social psychology

In explaining consumer behavior the most important fields in psychology since the 1970s have been the point of view of social psychology and cognitive psychology, with insights from behavioral decision researchers (Bagozzi et al., 2002). The most widely accepted model is the expectancy-value model (Ajzen, 2001, 2008), which is similar to the SEU model, but differs in some important ways. First of all it assumes no rationality. Beliefs may be true or false, biased or unbiased, they still form the information on which attitudes are based. Secondly it is assumed that attitudes towards products or brands (the expected utilities) as well as the beliefs on which they are based can be measured directly. The attributes should be identified systematically by qualitative research. The model has been summarized as follows (Fishbein, 1963; Cohen et al., 1972; Ahtola, 1975; Bettman et al., 1975a, 1975b; Fishbein and Ajzen, 1975; Ryan and Bonfield, 1975; Laroche, 1978; Warshaw, 1980; Pagel and Davidson, 1984; Ajzen, 1991; Bohner and Wänke, 2002; Ajzen and Cote, 2008; Olson and Kendrick, 2008):

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15 The developments in the behavioral economics and marketing research have not found (yet) their way into technology acceptance research as the review of these theories in chapter 2 has shown. This might be caused by the fact that till recently new ICT enabled channels have been competing with non-ICT enabled channels. The choice is then presented as choosing between using or not using an IS, between using technology or not using new technology. Nowadays a new ICT enabled channel as mobile Internet competes with an 'old' ICT enabled channel as the Internet; the difference between using or not using new technology has become less obvious. The choice is between competing technologies.

$$Ao = \Sigma \, Bi \, ei$$

In this model Ao is the attitude toward a particular object; Bi the strength of belief i about the attitude object o, that is, the probability or improbability that o is related to some other object xi; ei is the evaluative aspect of Bi, that is, the evaluation of xi – its goodness or badness; N is the number of beliefs. Attitude can be defined as "a function of the affect associated with the beliefs a person holds about the object" (Fishbein and Ajzen, 1972; p. 507).[16]

In general it is "assumed that attitudes toward available options – whether inferred from choices in the revealed preferences paradigm or measured directly – determine consumer decisions. When confronted with a choice between alternative brands or services, consumer presumably select the alternative towards which they hold the most favorable overall attitude. Because this assumption is virtually an article of faith, it is rarely questioned or empirically validated" (Ajzen, 2008; p. 534). Beliefs that are readily accessible in memory influence attitudes; the accessibility depends on the frequency with which it is activated, the recency of activation and its importance (Ajzen, 2001).[17]
It does not come as a surprise that this line of research, associated with Fishbein and Ajzen for almost five decades (Fishbein, 1963; Fishbein and Ajzen, 2010), has been challenged. Two major challenges are:

- the role of general attitudes;
- the role of past behavior.

The role of general attitudes on intentions (and behavior) is captured by an alternative model for TRA and TBP: Fazio's MODE model (Olson and Zanna, 1993), which stands for motivation and opportunity as determinants of spontaneous versus deliberative attitude-to-behavior processes (Fazio 1995). The theory states that when individuals are highly motivated to think about an attitude object and have the opportunity to do so, their attitudes will effect their behavior conform the TRA. If however the motivation or opportunity is not available, only highly accessible attitudes will guide behavior, which have an automatic effect on behavior. Automatically activated attitudes can "guide behavior in a relatively spontaneous matter, that is, without the individual's active consideration of the attitude and without the individual's necessary awareness of the influence of the attitude. Instead, the automatically activated attitude will influence how the person construes the object in the immediate situation, and this spontaneous appraisal will affect the person's behavioral response. A prerequisite for this spontaneous attitude-behavior process, however, is that the attitude be capable of automatic activation" (Fazio, 2001; p. 129). This automatic activation is reserved for strong attitudes, which means that the degree of accessibility is an indication for attitude strength (Fishbein and Ajzen, 2010). Attitude strength is related to attitude certainty, accessibility and extremity (Kim et al., 2009). This might offer an explanation for the influence of past behavior as experience leads to readily accessible attitudes (Ajzen, 2002b; Fishbein and Ajzen, 2010). Another aspect of the MODE model is the way the general attitude influences the attitude towards the object. The stronger the general attitude, the more it will influence the perceptions and judgments. This is consistent with

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16 Attitudes as a predictor of behavior (via intentions) is not without debate, as research has shown (e.g. Eagly and Himmelfarb, 1978; Davis et al., 1989; p. 989; Davis and Warshaw, 1991; Bagozzi and Washaw, 1992; Eagly and Chaiken, 1993; Fishbein and Middlestadt, 1995, 1997; Sengupta and Fitzsimons, 2000; Bagozzi et al., 2002; Foxall, 2005; Venkatesh et al., 2008; Kim et al., 2009; Puccinelli et al., 2009). One reason might be that general attitudes are not good predictors of specific behavior; for instance environmental concern as an attitude poorly predicts the buying of fewer packaged products. This calls for the principle of compatibility (action, target, context, time).

17 The attitude based model of TRA and TPB can be seen as extensions of the expectancy value model that itself can be seen as an extension of the SEU.

the Reasoned Action Approach of Fisbhein and Ajzen, as they view this as background variables in their model.

A similar approach is followed in the Elaboration Likelihood Model (ELM) of persuasion. In this model there are two routes to attitude change: a central route, which occurs when people are motivated and able to think about the issue and the peripheral route which occurs when motivation and/or ability is low (Cialdini et al., 1981; Petty et al., 1983, 1997; Petty and Cacioppo, 1996; Petty, 2006). The strength of the attitude is defined by this route:

> "The central route emphasizes a thoughtful consideration of the attitude issue whereas the peripheral route emphasizes aspects of the persuasion situation that are clearly tangential to the issue under consideration. (....) The accumulated literature on persuasion indicates that persuasion via the central route is likely to produce an enduring attitude change, but persuasion via the peripheral route is likely to produce a change that lasts only if the change is subsequently bolstered by supportive cognitive argumentation" (Caldini et al., 1981; p. 365).[18]

In the attitude research similar challenges have been formulated as in behavior decision theory. The MODE and the similar Elaboration of Likelihood Model can be seen as a tradeoff between accuracy and effort and as the use of some kind of heuristic. Instead of forming the attitudes as predicted by the Ajzen/Fishbein models, an alternative, shorter, 'route' is taken. In alternative models (for instance Triandis[19]) the rational focus has been broadened with affect and (past) behavior. This is in line with the definition of attitudes by most attitude researchers (e.g. Eagly and Chaiken, 1993; Bohner and Wänke, 2002; Maio and Haddock, 2009).

The relevance of the attitude research for the choice process is less obvious than with the decision making theories. The attitude research is targeted at human behavior in general and not specific at making choices between alternatives. This leaves one possible academic field: marketing.

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18 A related model is the Composite model (Eagly and Chaiken), which proposes that attitudes toward objects can influence attitudes toward behaviors in a more or less automatic fashion.

19 The Triandis model is similar to the Ajzen and Fishbein model and has been referred to as "the modified version of the theory of reasoned action" (Rensel et al., 2006; p. 21). It modifies some constructs. For instance Triandis differentiates beliefs in "beliefs that link emotions to the act (...) and beliefs that link the act to future consequences" (Thompson et al., 1991, p. 125). The actual behavior influences the beliefs about the consequences of the behavior and also influences the evaluations of these consequences (Karahanna et al., 1999). Affect is one of the components of attitude and is linked with feelings like joy, pleasure et cetera (Lee, 2000); the cognitive component or beliefs which are related to the information a person has about the object, issue or person (Thompson et al., 1991). Facilitating conditions are factors in the environment that encourage or discourage behavior (Rensel et al. 2006). The Triandis model has feedback loops to explain how IT adoption and use changes the beliefs and become antecedents to behavior intention (Thompson et al., 1994; Karahanna et al., 1999). In an equation it has been formulated as follows (Landis, Triandis and Adampoulos, 1978; p. 278):

$Pa = (w1H + w2I) \cdot F$

The probability of an act (Pa) is a function of habits (H), behavioral intentions (I) and facilitating conditions (F); w1 and w2 are weights that have to be established through multiple regression. From this it follows that if behavior has never occurred before, the behavioral intentions combined with facilitating conditions predict the behavior. For frequently repeated behavior habit becomes more and more important as the intentions are constant and the habit weight will keep increasing. When the weight of the intention component (w2) approaches zero, behavior is not predictable from attitudes but only from habit (and facilitating conditions). Behavioral intentions (I) are a function of norms, roles, the self-concept, the affect toward the behavior and the value of the perceived consequences of the behavior (Landis et al., 1978). This means that the model adds habit to the theory of planned behavior, at least if facilitating conditions are assumed to be similar to perceived behavioral control. Adding habitual aspects to the model is a returning issue with the developers of the models (see e.g. Ajzen, 2001; Fishbein and Ajzen, 2010; see also Betsch and Haberstroh, 2005).

The theories applied in marketing and marketing research

The developments in the academic marketing field resemble the aforementioned adjustments to the original model(s) in social psychology and behavioral decision theory. The multi attribute attitude model and the notion of attitudes have been important in the 1970s in the marketing literature (Gensch and Recker, 1979). In marketing the notion that consumers make tradeoffs between the relevant attributes of a product and form an opinion on several alternatives plays a central role. "Compensatory multiattribute preference models are widely believed to be capable of mimicking a wide range of consumer decision processes, provided two conditions are met: attributes are related monotonically to consumers' preferences, and there is error or uncertainty about these preferences" (Payne et al., 1993; p. 240). It has been stated that "The true value of multiattribute models lies in their diagnostic capabilities with regard to attitude change" (Bettman et al. 1978; p. 199).

The development of models in marketing and marketing research resembles the discussions and adjustments in the 'founding' academic fields, behavioral decision making theory and social psychology. In the first stage the most prominent models are the expectancy-value model (Rosenberg, 1956; Fishbein and Ajzen, 1972, 1975) and the adequacy-importance model (Bettman et al., 1975a). The first model is based on the attitude concept; the second model is based on the behavioral decision making model of weighted additive. One of the most common adjustments in marketing is substituting the evaluative aspects for the importance of the attributes (e.g. Bass and Talarzyk, 1972).[20] The so called adequacy-importance model (coined by Cohen et al., 1972) can be expressed as:

$$Aj = \Sigma\ Ii\ Bij$$

In this model Aj is the attitude towards brand j; Ii is the importance weight given to attribute i; Bij is the belief as to the extent to which attribute i is offered by brand j and n is the number of attributes. Some have changed the belief into satisfaction, which causes a problem as attribute satisfaction seems to imply beliefs and evaluations (Bagozzi et al., 2002). The combination of beliefs and importance (instead of evaluation) is similar to Rosenberg (1956) who defined the evaluative component as the amount of (dis)satisfaction (Rosenberg, 1956; Bagozzi et al., 2002). Luce et al. (2000b) show that importance might not be a one dimensional measure; loss aversion, protected values, negative emotions and cognitive difficulty seem to play a role as well.

In the 1980s a shift seems to occur: Green and Srinivasan state that, compared to the expectancy-value class of attitude models, "a more recent contender, conjoint analysis, shows indications of coming on its own as a practical set of methods for predicting consumer preferences for multi-attribute options in a wide variety of products and service contexts" (Green and Srinivasan, 1978; p. 103). In an update (Green and Srinivasan, 1990) they establish that since the early 1970s conjoint analysis has received considerable attention in the academic literature; thousands of applications have been carried out over the last three decades (Green et al., 2001). This has been confirmed by Hauser and Toubia (2005) and it has been mentioned as "perhaps the most celebrated research tool in marketing" (Bradlow et al., 2004; p. 369). It has been used for a large number of subjects, varying from evaluation of the design of promotional content on the Web (Drèze and Zufryden, 1997), choice of a shopping center (Oppewal et al., 1994), roasted peanut products in Haiti (Nelson et al., 2005a) and the development of a new recreation facility (Ross et al., 2003) to an understanding of the outsourcing of IT application services (Schwarz, 2009). The conjoint analysis studies have been classified according to the served purpose ranging from marketing segmentation to distribution

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20 Day (1972) even "cites' the model by substituting ai for Wj, being "the importance weight attached to the jth attribute of the set of objects" (Day, 1972; p. 280).

purposes (Cattin and Wittink, 1982; Wittink and Cattin, 1989; Vriens, 1994; Wittink et al., 1994), although the mentioned distribution purposes are not related to multichannel behavior.

One of the major differences is the possibility of the interaction between the attributes; not only the preferences for several values are asked but also combinations of values (Theetranont et al., 2007). This seems a solution for the discussion about the (alleged and disputed) independence of the attributes (e.g. Johnson et al., 1989).[21] In a conjoint analysis respondents are asked to choose between several options and therewith make tradeoffs between the different attributes (Wilson, 2006). Although the statistical theory behind conjoint measurement is rather complicated (see e.g. Von Wintersfeldt and Edwards, 1986; Baron, 1988), the reasoning behind the measurement is simple. Respondents choose between options that vary in their value on the attributes (Park et al., 2008). Consider for instance a simple product like toothpaste (for some reason this product is relatively often chosen in research; e.g. Nakanishi and Bettman, 1974; Biehal and Chakravarti, 1982a, 1982b; Kapur et al., 2008; Lehmann et al., 2008). These attributes are: brand name (five brand names), breath freshening capability (yes/no), cavity prevention capability (yes/no) and teeth whitening capability (yes/no). In the research the respondent is now faced with choosing between several different combinations of these attributes. Based on these choices the importance of the attributes is calculated and used to predict the impact of the value of the attributes on the consumer preferences. As such the model is similar to the expectancy value models as the conjoint models "utilize a linear equation for the deterministic component of utility for a profile that implies a compensatory decision rule, i.e. lacking on one feature can be 'made up for' by being better on another feature" (Bradow, 2005; p. 321).

The new insights from behavioral decision theory and attitude research have been introduced into consumer behavior theory as well. Behavioral decision theory has inspired research that demonstrates violations of the utility maximization assumption, based on the structural approach (e.g. Dhar and Simonson, 1992; Dhar and Sherman, 1996; Mantel and Kardes, 1999; Dhar et al., 2000; Kivetz et al., 2004; Park and Kim, 2005; Ho et al., 2006b; Mourali et al., 2007; Ha et al., 2009; Khan et al., 2011) and the process approach (e.g. Wright, 1975; Curry and Menasco, 1983; Johnson and Meyer, 1984; Alba and Hutchinson, 1987, 2000; Alba et al., 1994; Newell and Shanks, 2003; Hogarth and Karelaia, 2005; Kohli and Jedidi, 2007; Novemsky et al., 2007; Yee et al., 2007; Nowlis et al., 2010). The most important recent developments in attitude research regarding consumer behavior have been the affective and behavior component of attitudes, the nonconsious nature of human

21 This is related to an issue with the multi-attribute attitude model about cognitive summation versus cognitive averaging (Fishbein and Ajzen, 1972; Bettman et al., 1975b; Anderson, 1981, 1982; Bagozzi et al., 2002; Albarracin et al., 2008; Olson and Kendrick, 2008; Carlson and White, 2008). The averaging model states that the weight or importance of an attribute varies according to the weights of the other attributes; the additive model states that the weight of each attribute is independent of the others (Marshall et al., 1995). In a situation in which the consumer knows three positive elements of a product, adding a moderate positive element would increase the favorable attitude if the adding strategy is used. If the averaging strategy is used, it depends on the weights the elements now get. If these are all the same, the product would be less preferable, given the new information (McGuire, 1976). Although it has been stated that "critical qualitative tests have nearly always supported the averaging hypothesis and ruled out the alternative summation hypothesis" (Farkas and Anderson, 1976; p. 254), the issue is typically for studies that compare attitudes described by different sets of attributes (Fishbein and Ajzen, 1972). Lynch (1985) states that "in relatively few published articles in marketing and consumer research has the integration paradigm been used to study basic consumer judgment processes (p. 2)". Marshall et al. (1995) come with two possible reasons for this oversight in the marketing literature. The first is that the additive model fit the data so well that nobody felt the need to look for another model. A second reason is the techniques used for the information integration theory, which can hardly be used in market place conditions. Anderson (1981a) states that information integration theory may provide a theoretical foundation for multi attribute models. The models can be seen as part of cognitive algebra; self estimation can be tested in the research by comparing the stated preference with the preference based on the model. Bagozzi et al. (2002) mention research in favor of the averaging model.

behavior (Bargh, 2002) and the two distinct routes to attitude change. Especially attitude change has been of major interest in marketing and consumer behavior research as marketing professionals are not only interested in explaining present behavior but also in finding ways to influence future behavior. Attitudes have a high appeal for marketers because of the implications for attitude change it suggests (Bagozzi et al., 2002). The theoretical approaches of the peripheral route to attitude change have led to research on the importance of consumer involvement (e.g. Petty et al., 1983) and consumer experience. In marketing research ELM has been used in research on communication strategies (e.g. Rucker and Petty, 2006), effectiveness of messages (e.g. Tormala and Petty, 2004; Wheeler et al., 2005) and advertising (e.g. Haugtvedt et al., 1994; Morris et al. 2005).

After this brief description of the theoretical developments, the next step is to evaluate these models for their relevance for explaining channel choice. In explaining channel choice a number of elements has to be explained. First of all it has to be clear what alternatives are considered. How does one decide between which alternatives to decide? The second element is the choice process itself. How is the choice between the alternatives made and can this choice be predicted? A third element, given the character of multichannel behavior, is past behavior. In what way is past behavior an explanation for present (or future) behavior?

2.8 Evaluation of choice models

In table 2.5 the discussed theories are reviewed on the relevant elements of consumer choice in relation to multichannel behavior. The theory should provide, to begin with, insights in which channels are considered. The second element is the explanation of the choice process: which decision strategy is chosen. This should lead, in the model, to the possibility of predicting the choice. Another element is formed by the role of past behavior. Past behavior has received much intention in the theoretical debate and the model should take into account the (dis)satisfaction with the channels used in the past.

STRATEGY	EXPLANATION ALTERNATIVES CONSIDERED	EXPLANATION CHOICE PROCESS (HOW)	PREDICT CHOICE	ROLE OF PAST BEHAVIOR
SEU	- -	+ +	+ +	+ -
Process behavioral decision theories	- -	+ +	+ +	+ -
Structural behavioral decision theories	- -	+ -	- -	- -
Expectancy value model	- -	+ -	+ -	- -
ELM	- -	+ -	- -	+ +
MODE	- -	+ -	- -	+ +
Adequacy importance model	- -	+ +	+ +	+-
Conjoint analysis	- -	+ +	+ +	- -

Table 2.5 Classification of decision strategies

Based on these criteria SEU, the process behavioral decision theories, the expectancy value model and the adequacy importance model are the most suitable theories to explain the choice process in a multichannel context. The shortcomings of the other theories/models can be summarized as follows:

- The prospect theory has the "gambling paradigm" (Batch and Haverstraw, 2005; p. xi). This results in the neglect of past behavior and experience. "The revealed approach thus can provide information about general principles of consumer decision making, but it is not particular useful for learning about the considerations that guide actual decisions with respect to the purchase of real-life consumer products" (Ajzen, 2008; p. 530).
- The attitude research (on which ELM and MODE is based) has a general weakness: it is based on Fishbein's model, which was "not developed for the purpose of studying brand preference or indeed for the purpose of studying relative attitudes for different objects, but rather for studying the attitudes of different people for the same object. This difference in purpose has an important bearing on the method of analysis to be used in comparing alternative models and measures" (Bass, 1972; p. 461). Ajzen and Fishbein (1980) have argued that their model can be used for studying behaviors that involve choices between two or more alternatives. The differences in the intentions associated with the alternatives should be measured. The model then resembles the subjective expected value and subjective expected utility of decision making (Eagly and Chaiken, 1993).
- The conjoint method is based on the multi attribute model: respondents have to tradeoff between levels of attributes. As the scope of this research is to explain the use of new ICT enabled channels (regardless of what they are), the focus should not be on the attributes but on the consequences. If for instance a consumer prefers a large screen above a small screen, this leads to information on the difference in preference between transactions on a computer versus transactions on a mobile device. However, these attributes are specific for these two channels and do not tell anything about the reasons for these preferences (the consequences). From reviewing some of the literature on conjoint analysis (e.g. Green and Wind, 1975; Louviere and Levin, 1978; Louviere, 1983; Louviere and Johnson, 1990; Srinivasan and deMaCarty, 1999; Gibson, 2001; Green et al. 2001; McCullough, 2002; Toubia et al., 2004; Allenby et al., 2005; Almquist and Lee, 2009) and some of its more recent applications on services (Danaher, 1997; Ida et al, 2008), marketing channels (Wuyts et al., 2004), movie distribution channels (Hennig-Thurau et al., 2007) and service attributes in multichannel environments (Cassab, 2009), it becomes clear that the method is especially suitable for helping marketers design their products, advertisement, pricing strategy et cetera, which is in line with the original purpose, namely to predict customer reactions to new products and services. This is not applicable to the use of channels: the channels are a bundle of attributes that can hardly be altered. One cannot attach several levels to these attributes; mostly the channel either has the attribute or does not have the attribute. This could be used in a conjoint measurement, but the important assumption is that these attributes are objective and the same for everybody. With technology and channels this is not the case as the discussed theories have made clear: the values of attributes are perceived values. If one would use the attribute speed for instance, one might find that the consumer prefers high speed to low speed. However, we need to know what the consumer thinks about the channel (has the Internet for instance high or low perceived speed) to understand the preferences. Another argument is that in describing the 'alternative' conjoint analysis models it has been noticed that "the vector model is identical in mathematical form to the Fishbein-Rosenberg class of multi-attribute model" (Green and Srinivasan, 1978; p. 105) and one of the approaches to handle the problem of large numbers of attributes, self-explication approach, is said to be an approach of the expectancy-value models of attitude theory (Green and Srinivasan 1990).

Two elements are not included in the theories that are defined as important: the considered channels and past behavior. These elements are not included in the behavioral decision making theories nor in the expectancy value model and the adequacy importance model, but they need to be included in the model. The solution is the inclusion of two marketing concepts, because

although marketing has been influenced since its inception as a discipline in the early 1900s (Sheth et al., 1988) by the discussed academic fields, it has produced – for multichannel behavior - relevant concepts of consumer behavior as well, that give insight in these two issues. These two concepts will be discussed briefly, before a decision making strategy is chosen to include in the model.

Consideration set

In line with the reasoning in the behavioral economics (bounded rationality) a construct has been introduced, the consideration set, to explain consumer choice. Having its origins in the business literature (March and Simon, 1958) this construct has been introduced into the marketing literature by Howard in 1963 under the name of evoked set[22] (Gronhaug, 1973; Petrof and Daghfous, 1996; Punj and Srinivasan, 1989; Aurier et al., 2000) and is defined as " the set of brands brought to the consumer's mind in a particular choice occasion" (Nedungadi, 1990; p. 264) or "the brands that a consumer would consider buying in the near future" (Roberts and Lattin, 1991; p. 430). It can be argued that this is in line with the general theory about the limited human rationality, which means that "we must simplify our problem formulations drastically, even leaving out much or most of what is potentially relevant" (Simon et al., 1987; p. 13). The concept of the consideration set is based on the decision making process (Roberts and Lattin, 1991), which states that with complex decision making processes or with a large number of alternatives consumers make a phased decision. In the first phase they filter available alternatives; in the second phase these alternatives are analyzed (Roberts and Lattin, 1991; p. 430; Ben-Akiva and Boccara, 1995; Hogarth and Karelaia, 2005; Sirakaya and Woodside, 2005; Ballantyne et al., 2006; Kumar and Benbasat, 2006; Moe, 2006; Van Nierop et al., 2010). The reason for this behavior can be found in the theory of the bounded rationality: humans don't have perfect information and they do not have all eternity at their disposal (Gigerenzer, 2004). Consumers can go through several stages to come to a final choice set. The consideration set can be viewed as a two stage decision process: first one forms a choice set based on for instance Elimination By Aspects; the remaining alternatives are considered according to for instance the weighted adding strategy (Gilbride and Allenby, 2004; cf. Ben-Akiva and Boccara, 1995). The overall utility determines whether the alternative is included in the consideration set.

The process of forming a consideration set is shown in figure 2.12 (cf. Narayana and Markin, 1975[23]; Kotler, 1980; Turley and LeBlanc, 1995; Priester et al., 2004; Ho and Tam, 2005; Sirakaya and Woodside, 2005). This model has been used for research on retail selection (Spiggle and Sewall, 1987). Consumer channel choice is made up of a complex mix of positive and negative influences, related to characteristics of products, channels, organizations (Van Dijk et al., 2007; p. 9). In researching (in a qualitative study) the use of channels during the purchasing of travel services, they come to the conclusion (ibid., p. 16):

> "Rather than one major decision that defines a complete consumption process, consumer channel choice seemed to be a continuous process that spans every stage of the consumption process. Throughout the consumption process new channel choices are made and movements between channels occur. These movements were often not an effect of problems in technical performance or design of the e-services. In the explanations the participants gave of their

22 Although some authors (e.g. Narayana and Markin, 1975; Srinivasan and Ratchford, 1991; Lehmann and Pan, 1994) mention only the evoked set, many authors use the term consideration set for the same concept (e.g. Roberts and Lattin, 1991, 1997; Andrews and Srinivasan, 1995; Horowitz and Louviere, 1995); Ballantyne et al., 2006) or use both terms (e.g. Punj and Srinivasan, 1989). Especially in more recent publications the term consideration set is found (e.g. Aurier et al., 2000; Krieger et al., 2003; Wu and Rangaswamy, 2003; Jung and Kim, 2005; Chakravarti et al., 2006; Parra and Ruiz, 2009)

23 In this much cited article, the empirical study consists of a convenience sample of two marketing classes with a sample size of 74.

voluntary parallel channel use and channel switches, many of the influencing factors known from the literature on the adoption of SSTs and consumer channel choice were mentioned,....".
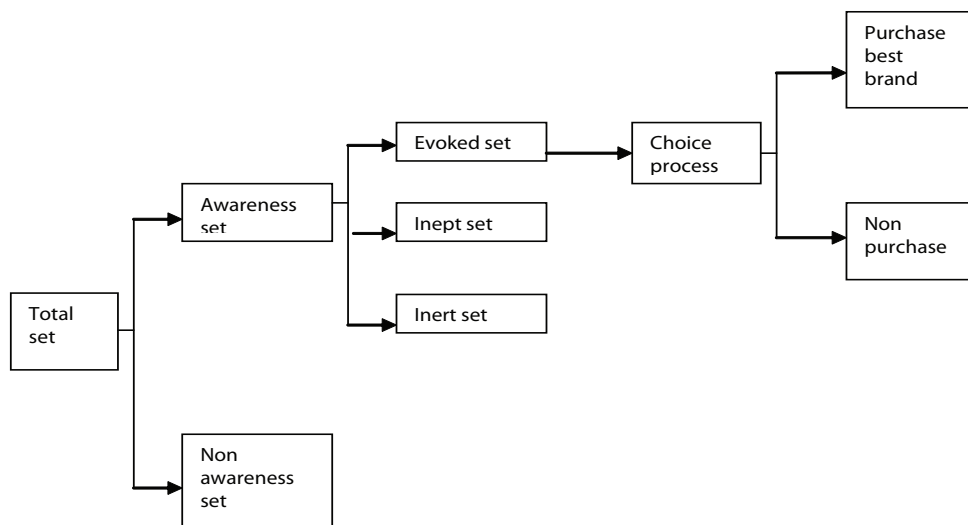
Figure 2.12 The consideration set model

In the literature the focus has been on the size of the evoked set and the content of the set (Troye, 1984; Jung and Kim, 2005). The size of the consideration set is influenced by experience[24], interest, degree of time pressure, perceived risk, venturesomeness, awareness of brands, maturity of product category and use of search tools (Gronhaug, 1973; Gruca, 1989; Punj and Sriniivasan, 1989; Hauser and Wernerfelt, 1990; Srinivasan and Ratchford, 1991; Elliott, 1994; Johnson and Lehmann, 1997; Aurier et al., 2000; Heilman et al., 2000; Jung and Kim, 2005; Lauraeus-Niinivaara et al., 2007; Parra and Ruiz, 2009). The content of the consideration set is influenced by satisfaction/dissatisfaction, new information in the post purchase stage, experience and motivation (LeBlanc and Turley, 1994; Turley and LeBlanc, 1995; Jung and Kim, 2005; Chakravarti and Janiszweski, 2003).

The consideration set can be explained with insights from the behavioral decision making literature or the attitude concept. It can be seen as an example of bounded rationality (one cannot compare all possible mobile phones with each other; therefore a shortcut is necessary) or prospect theory (in which the considered brands are seen as the reference point against which new brands are compared). Seen from the theories about attitudes, the consideration set can be explained with MODE in two different ways. The first explanation is that the consideration set is based on past behavior and that the motivation or opportunity is not available and therefore only highly accessible attitudes will guide behavior. If there has not been any past behavior, a second explanation is that the general attitude about brands guides the attitude. This is in line with many marketing analyses in which the brand (and the image of the brand) is seen as one of the most important marketing issues. The justification for this trend in marketing is usually associated with the new technological developments, globalization et cetera. However: it might just be an application of the (newer) insights of the social psychology.

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24 The evidence is mixed: in some research experience leads to a larger size of the consideration set, but Punj and Srinivasan (1989) state that expertise leads to a decrease of the size of the evoked set.

Typology of buying behavior

Addressing the issue of past behavior and related to the concept of the consideration set is the typology of buying behavior by Howard and Sheth (1969). This typology of buying behavior is summarized as follows (Verhage, 2010; p. 154):

	EXTENDED PROBLEM SOLVING	LIMITED PROBLEM SOLVING	ROUTINE PROBLEM SOLVING
perceived risk	significant	reasonable	limited
consumer involvement	high	average	low
purchase frequency	low	normal	high
number of brands considered	many	several	one
information gathering	extensive	little	minimal
price	high	reasonable	low

Table 2.6 Buying behavior

It assumes that consumers use different decision making strategies that are related to the situation. The situation is influenced by the nature of the product/service and the experience with the product/service. In most of their decision making (routine and limited problem solving) the consumer uses rules and heuristics that are stored in memory (cf. Bettman and Zins, 1977). In that case the consideration set is small or even limited to one brand.

2.9   Choosing the choice model

The literature review reveals many models that might explain consumer decision making. In the behavioral decision making theory eleven strategies are mentioned; the review of the other academic fields add the expectancy value model and the adequacy importance model. A choice for a decision making model has to be made. This can be done on the assumption that the choice for a decision strategy is based on the tradeoff between accuracy and effort (Payne et al., 1993; Bettman et al., 1998, 2008). This assumption leads to the choice for the compensatory model. This model is seen as the normative procedure (Payne et al., 1993), which means it has the highest accuracy, but also implies a large effort. Therefore consumers will only use this method if the effort is relatively low. There are four arguments to assume low effort while using a compensatory method when choosing among channels.

• First it has been noted that this method is applicable in situations in which consumers are familiar and experienced with the preference object (Payne et al., 1993; Bettman et al., 1998). The use of channels for the purchase of financial services fits without doubt this category. This is in line with the information search paradox, where people tend to behave more rational in information search about products when they have more experience until a certain level is reached resulting in the inverted U-relationship between number of features considered important and consumer product familiarity (cf. Bettman and Park, 1980; Johnson and Russo, 1984; Moorthy et al., 1997). If consumers have little experience, they have difficulty in deciding on the relevant features; with increasing familiarity they are more able to use features; with a lot of experience they also know which features to ignore (Iqbal et al. 2003).
• Secondly the choice among options depends on the goals of the decision maker (Bettman et al, 1998). From research it has become clear that consumers see some (for instance financial)

services as a 'necessary' action in which they are rather goal oriented and want to minimize the effort, which complies with rational decision making. Given the perceived risk of financial transactions (e.g. Black et al., 2001, 2002; Laukkanen et al, 2009; Lee, 2009) it is assumed that consumers will value accuracy (that is making the right choice).

• Thirdly the choice for a decision strategy depends on the task complexity (Bettman et al., 1998). The more complex the decision tasks the more consumers use simple decision processes. The choice between channels can hardly be evaluated as a complex decision task, given the experience consumers have. Therefore it is unlikely that consumers use a simple decision process.

• A fourth argument is the finding that real-world consumers use a compensatory strategy after they have narrowed down the number of alternatives to brands they consider suitable for the purpose (Ratneshwar et al., 1987). This is in line with the findings in marketing about the consideration set and conform the statement of Payne et al., 1993) that when there are not many alternatives (two to three), usually a strategy is used in which all relevant information is used to decide and a compensatory strategy is used.

These arguments favor a compensatory decision making strategy. This leaves three possible strategies: the expectancy value mode, the adequacy-importance model and the weighted and simple additive model. The weighted additive and the adequacy-importance model can be viewed as similar. This means a choice between the expectancy value model and adequacy-importance model has to be made. Arguments in favor of one of the models date from more than 30 years. In the 1970s the debate in the marketing literature is about which of these two models performs best. Bettman et al. (1975a, 1975c) find Fishbein's model superior to the adequacy-importance model: "The weight of the evidence, then, seems to indicate that the Fishbein components are less ambiguous than the adequacy-importance model components, and that the Fishbein model algebra corresponds to subjects' cognitive algebra more closely than adequacy-importance model algebra" (Bettman et al., 1975a; p. 163). It should be mentioned that the sample consisted of psychology students (Bettman et al., 1975c). An opposing view comes from Mazis et al. (1975) who conclude after three experiments that the adequacy-importance model "provides better prediction than the Fishbein and Rosenberg formulations" (p. 50). Ahtola (1975; p. 51) argues that Fishbein's model: "does not discriminate between perceived possession and probability. That is, Fishbein's operationalization of belief strength mixes up what the subject believes and how strongly he believes what he does" (p. 53). A similar argument is found in Mazis et al. (1975) who state that Fishbein uses "belief statements which specify only the direction of the belief..... For example, if a person uses the scales purely as probability scales and he knows that Fresca is 'carbonated', he will give maximum scores on the scales whether he knows that it is only 'slightly carbonated' or whether he knows that it is 'very carbonated', as long that he is sure that it is 'carbonated'. Another person who also is sure that Fresca is 'slightly carbonated' may give relatively low scores because Fresca is only 'slightly carbonated'. It is argued here that Fishbein's Bi does not discriminate between perceived possession and probability."

Bass (1972) states that the Fishbein model is intended to study the difference in attitude of several persons for one object; the model is not meant to study the difference in attitudes towards several objects for one person. This means that the adequacy importance model is more suitable for studying multichannel behavior than the expectancy-value model. It has been used beyond doubt commonly in marketing and market research (Bettman et al., 1975a, 1975b, 1998). This is evident from the large number of publications in marketing research and marketing journals in the 1970s on this subject and the debate in the literature (Bass, 1972; Bass and Talarzyk, 1972; Cohen et al., 1972; Day, 1972; Sheth, 1972; Sheth and Talarzyk, 1972; Talarzyk, 1972; Tuck, 1973; Bettman et al. 1975a, 1975b, 1975c; Mazis, 1975; Ahtola, 1975; Wright, 1975; Laroche, 1978; Warshaw, 1980; Lynch, 1985) and it has been used in explaining multichannel shopping (McGoldrick and Collins, 2007).

One issue has to be resolved: the role of the importance scores. In the weighted additive strategy the importance scores play a role; in the simple additive strategy the importance scores do not exist. This has consequences for the model. As the literature does not provide unequivocal arguments for one of the two possibilities, the choice is postponed till the research stage. In the model the weighted additive will be used, but in the pilot research the simple additive method will be tested as well.

2.9   Conclusions

The literature review reveals that the Technology Acceptance Model (TAM) is the most used model for explaining the trial of an ICT enabled channel. However, TAM has numerous shortcomings in explaining the other two elements: continuous use and choice between channels. Although support has been found for the model in eCommerce settings - the influence of PU and PEOU on intention to use - in most research the model has been expanded with constructs from other theories, indicating TAM's wide recognition on the one hand and some dissatisfaction with TAM to explain the use of distribution channels on the other hand. The Technology Acceptance Model has been extended in three primary ways (Wixam and Todd, 2005). The first way is extending the model with factors from other related models, such as subjective norm, perceived behavioral control, Transaction Cost Economics (e.g. Gefen, 2000; Featherman and Pavlou, 2003; Chen et al., 2004; Chen and Tan, 2004; Carter and Belanger, 2005; Cho, 2006; Son et al., 2006; Pavlou and Fygenson, 2006). A second approach is adding other belief factors to the model, like trust (Kim et al. 2004; Hampton-Sosa and Koufaris, 2005; Wang and Benbasat, 2005, 2007, 2008; Cyr et al., 2007). A third approach has been the extension with external variables, like personality, demographic characteristics and system characteristics (e.g. Chau and Lai, 2003; Gardner and Amoroso, 2004).

The review of the other used theories in the literature on eCommerce and Internet shows that the EDT model is most suitable for explaining the continuous use of a new channel. The combination of TAM and EDT has similarities with other models that integrate TAM and EDT (e.g. Bhattacherjee, 2001a, 2001b; Bhattacherjee and Premkumar, 2004; Roca et al., 2006; Thong et al., 2006; Liao et al., 2007; Premkumar and Bhattacherjee, 2008; Sørebø and Eikebrokk, 2008; Chiu et al., 2009; Cho et al., 2009; Liao et al., 2009; Kang and Lee, 2010; Lee and Kwon, 2011; Tseng and Lo, 2011). However, the theories are not suitable for explaining the choice between channels.

Therefore the constructs of TAM have been combined with the construct of the consideration set from the marketing literature. The dynamics of the use of a channel are integrated into the model with the Expectation Disconfirmation Theory. Combining TAM and EDT has given better results than the two models alone (Premkumar and Bhattacherjee, 2008). However, it expands those models as it uses constructs from other relevant theoretical domains (especially consumer research) and is specifically tailored towards the choice between competing alternatives, therewith providing the research that has been called for:

 "…individual technology-adoption models tend to focus on a particular technology and study the intention and use of that technology, but the work I call for will focus on the choice an individual may make across different competing alternatives" (Venkatesh, 2006; p. 509).

The use of the multi attribute attitude model is in line with previous research (e.g. Dabholkar 1996; Schubert, 2002; McGoldrick and Collins, 2007; Van Dolen et al., 2007; Verhoef et al., 2007) and is in accordance with research on the use of decision support systems in which the multi attribute model is often used (e.g. Häubl and Murray, 2003; Kamis, 2006; Theetranont et al., 2007; Westerman et al., 2007; Al-Aomar and Dweri, 2008; Cai and Xu, 2008; Kamis et al., 2008).

This means the first sub question has been answered: the theories that can be used to find the factors that explain the trial, adoption and choice of a new ICT enabled channel by customers in a multichannel configuration. The second sub question, is it possible to arrive at a model based on these theories that explains the use of ICT enabled, will be the subject of the next chapter.

"TAM's U and EOU are postulated a priori, and are meant to be fairly general determinants of user acceptance. This approach is chosen in an attempt to arrive at a belief set that more readily generalizes to different computer systems and user populations."

Davis et al., 1989, p. 988

CHAPTER 3　　　　　RESEARCH APPROACH: DEFINING THE MODEL[25]

3.0　　Abstract

The theories are used to build the model. This model is translated into a questionnaire that can be used in a pilot study. The first step is to define the attributes as they have a central role in the model. The TAM constructs PU and PEOU are less suitable as attributes to explain the use of an ICT enabled channel in a consumer behavior context than was expected. These constructs have been developed for using or not using an IS in a working environment. In the literature there is however no consensus on the most important attributes in multichannel research and it becomes clear that the mentioned attributes in the literature are measured on different levels. Although in many Internet related studies the attributes are based on existing research, this approach is not followed in this study. The attributes are defined by qualitative research, using the laddering method. This means a deviation from the original idea behind TAM: defining the relevant attributes for once and for all. Based on the laddering interviews eight attributes are selected and are used in a pilot study. The pilot study is not only meant to test the questionnaire and the experiment with mobile Internet, but also to verify some of the basic assumptions of the model. The findings of the pilot study show that respondents do have a channel choice set and are able to rank the channels according to their preferences. The eight selected attributes have high importance scores, which are confirmed in a survey in another (eGovernment) context. Doubt is raised about the relevance of the decision making strategy that is used in the model: the simple additive and weighted additive have similar scores on predicting the most preferred channel. The scores are not that high that other decision making strategies can be excluded. A qualitative research in which respondents are asked to explain their channel choice cannot give a decisive answer is this matter.

3.1　　Introduction

In the preceding chapter the first sub question has been answered; the theories that can be used have been traced. In this chapter the second sub question is addressed:

- *Is it possible to arrive at a model based on these theories that explains the use of ICT enabled channels?*

With the selection of the decision making strategy the three elements of multichannel behavior – trial, adaptation and choice – have a theoretical basis and can be integrated into one model. The steps in building the model are as follows. First an explanation has to be found for the acceptance of the new channel. The second step is to explain the choice of a specific channel. The third part is the integration into the model of actual use: what happens with the channels considered and the channel preference after the new channel has been used.

3.2　　Building the model

TAM is the start of the model. The PU and PEOU of the new channel explain the behavioral intention. The original TAM has been adjusted conform TAM2 and TAM3 and numerous research (e.g. Adams et

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25 This chapter is partly based on Heinhuis and De Vries, 2010.

al., 1992; Venkatesh et al., 2003; Hong et al., 2006; Premkumar and Bhattaherjee, 2008; Bhattacherjee and Harris, 2009; Kim et al., 2009; Gu et al., 2010; Kim, 2011) in which PU and PEOU lead directly to behavioral intention and attitudes are omitted. This approach is followed in this research as well and leads to the basic model:
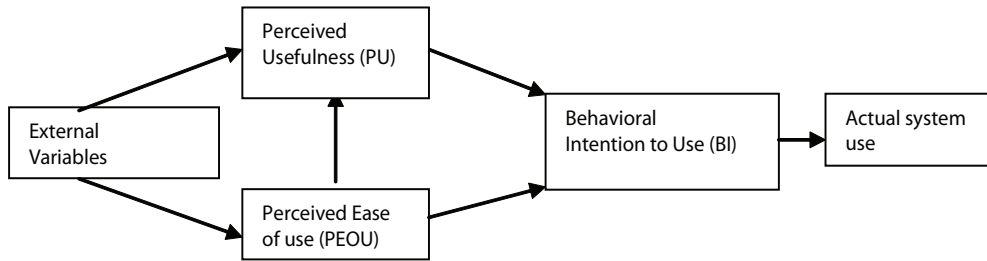
Figure 3.1 The basic TAM

To adapt TAM to the specific multichannel environment BI is used to explain the consideration set. For all relevant channels a BI is formed. These BI's can be seen as preferences for the channels, which are in this case called the channel choice set (cf. Ajzen and Fishbein, 1980; Eagly and Chaiken, 1993). Given the introduction of a new channel (e.g. Internet), consumers are influenced by external variables (like marketing efforts by suppliers or personality traits like innovativeness). Based on these influences and the relevant factors for choosing channels which are translated in TAM as PU and PEOU, a BI for the new channel is developed and the new channel gets a preference ranking in the channel choice set, leading to the model in figure 3.2.
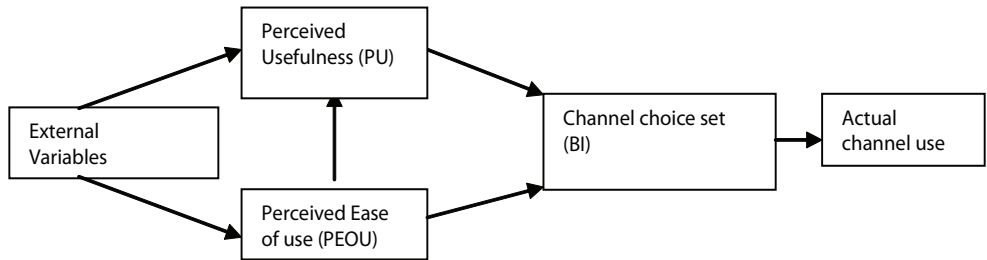
Figure 3.2 TAM and the consideration set

The forming of the channel choice set is only the first part of the evaluation process; in addition the consumers have to decide how to evaluate the alternatives. The combination of the channel choice set and the actual choice favors the use of the multi attribute model. The channel choice set restricts the number of alternatives, which are then compared on all relevant attributes (cf. Day, 1972) and aside from all critics it has been found that "the use of multi-attribute models to predict consumer response to new products has been one of the major success stories of marketing science" (Johnson et al., 1997; p. 32). This means the model is extended as follows:
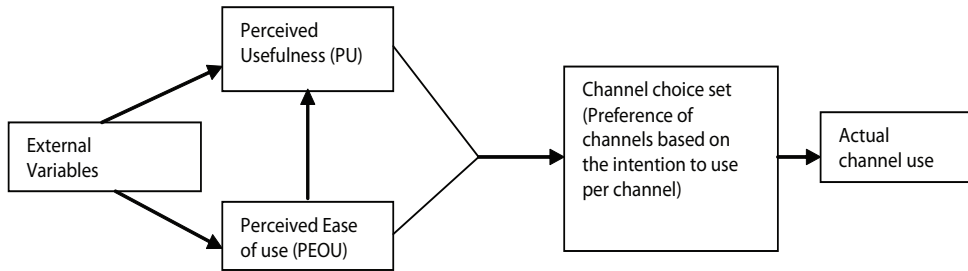
Figure 3.3 TAM and preferences based on the channel choice set

The preferences are, conform TAM, based on the PU and PEOU per channel. The higher the PU and PEOU of a channel, the higher the preference for this channel (cf. Mitchell and Beach, 1976; Srinivasan, 1979), which is in line with the observation of Ajzen (2008) that consumers, when confronted with a choice, presumably select the one for which they have the most favorable overall attitude, which leads in this model directly to intention to use. The preferred channel is the channel with the highest intention to use. In this way the logic and constructs of TAM have been combined with the consideration set and multi attribute models of the marketing literature. Incorporating preference to TAM is in line with the call for future studies by Muthitacharoen et al. (2006; p. 688), who state:

> "Incorporating preference to important theories in IS research, such as the innovation diffusion theory, the theory of reasoned action, and the technology acceptance model, could provide an avenue to explain why a user refuses to adopt a proposed technology, which is an on-going topic in IS research".

The next step is explaining the dynamics of the channel choice set, which is the main focus of the model. This is done by the actual use of a channel and here EDT is integrated into the model.
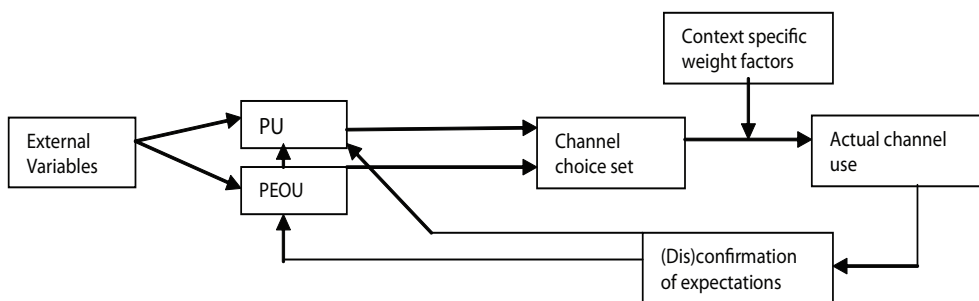
Figure 3.4 TAM combined with EDT to reflect the importance of (dis)confirmation of expectations for continuous use

The use of a channel will depend on the intention to use this channel, conform the TAM. However, as the choice is between the use of several channels, the behavioral intention has been expanded to the channel choice set, in which for every channel an intention is formed, leading to preferences for the channels, according to the definition of preferences as "attitudes toward one object in relation to another" (Blackwell et al., 2001; p. 289; see also Mitchell and Beach, 1976). The actual use of a channel will result in the evaluation of the performance of the channel according to the EDT, where

the performance of a channel is evaluated especially on those attributes on which the channel was chosen. This leads to (possible) new scores for a channel on the attributes. This will result in (in line with TAM) new PEOU and PU scores that might lead to a change in behavioral intention towards the channel, resulting in a change in the positions in the channel choice set. It might influence the weighting factors of the channels which is conform the adequacy importance model and has also been demonstrated in TAM research, where the importance of PEOU decreases after use of an IS system (e.g. Szajna, 1996, mentioned by Premkumar and Bhattacherjee, 2006; Bhattarcherjee and Harris, 2009). In this way TAM has been expanded to the multichannel environment with the use of concepts from the behavioral economics and marketing field.

The model can be explained with an example. Let us assume a consumer wants to buy (for the first time in her life) a life insurance. Her channel set is caused by her experience with channels in former service settings or as a result of external factors like social influence of her family or marketing campaigns. Her channel set might consist of for instance three channels: telephone, Internet, branch office. She might use the Internet for closing the contract. After evaluation of her experience, her (presumably quite subconscious) expectations will be confirmed or disconfirmed. This will have impact on the preferences of the three channels within the channel set, which will determine the channel choice during the next purchase of an insurance.

To develop the model the first step is to define the attributes. It is obvious from the model (see figure 3.4) that the attributes have a central position in the model. They form the central part of TAM for explaining the trial and the use of a new ICT enabled channel. They are important in defining the choice in the weighted and simple additive model and they play an important role in defining the satisfaction with the used channel. Therefore this chapter continues with defining these constructs by analyzing the TAM constructs PU and PEOU. After defining the attributes, the research design that leads to the development of a questionnaire and an experiment set-up will be discussed (cf. Fishbein and Ajzen, 2010).

The second step in developing the model consists of a pilot study. This pilot study serves three purposes in this research. First of all the questionnaire has to be tested. The testing of the questionnaire is used to identify and correct design errors, determine the length of the interview and other questionnaire related issues (Hoyle et al., 2002; Wilson, 2006; Lazar et al., 2010) and is a standard procedure in (almost) every survey. In this research however it is not only testing the questionnaire that is necessary in this stage. A second purpose is to evaluate the experiment (see 3.6 for a description), a procedure not uncommon in experiments in human-computer interaction (e.g. Lazar et al., 2010). A third goal of the pilot research, that is specific for this study, is to test whether the assumptions (on which the model is based) are valid. The reasoning behind testing these assumptions is that the model in general is based on rational decision making by the consumer. There is hardly literature on the decision making strategies of consumers in choosing a channel and therefore some caution with these assumptions is necessary. This pilot study can be seen as the first stage in answering the sub question: is it possible to arrive at a model?. Some issues need to be clarified. First it has to be evaluated whether consumers do have a channel choice set. Secondly the validity of the compensatory model has to be determined. The choice for a decision making model is not without debate and it has been mentioned before that it is not obvious whether importance scores need to be included, assuming enough evidence is found for the compensatory model in general. If these assumptions are not confirmed in the pilot study there is no need to test the model.

This leads to a number of general research assumptions:
- *Assumption 1: Do consumers have a channel choice set, which means consumers are able to rank the channels according to their preference based on an evaluation of the channels?*

- *Assumption 2: To what extent does the compensatory choice model predict the decision making process in channel choice? Does the weighted additive model scores higher than the additive model?*
- *Assumption 3: To what extent does the consumer evaluate the importance of the attributes after the use of a channel?*
- *Assumption 4: Does the actual use of a channel affect the channel choice set by influencing the preferences (ranks) of the channels?*

3.3 Defining the attributes: the TAM constructs

In the article that introduced the TAM in the academic literature (apart from the dissertation published three years earlier), Davis (1989) develops the scales for PU and PEOU (see table 3.1). Based on previous research 14 candidate items for each construct are used in a pretest among 15 experienced computer users from the university (five secretaries, five students and five members of professional staff) and are brought back to 10 item-scales for both constructs. After testing these scales among 120 users of an electronic mail system within IBM Canada, the scales are refined to a six item scale, which has been tested among 40 evening MBA students at Boston University, leading to the following items (Davis, 1989; p. 331):

RESULTS FROM FACTOR ANALYSIS	FACTOR 1 (USEFULNESS)	FACTOR 2 (EASE OF USE)
USEFULNESS		
Work more quickly	.91	.01
Job Performance	.98	- .03
Increase productivity	.98	- .03
Effectiveness	.94	.04
Makes Job Easier	.95	- .01
Useful	.88	.11
EASE OF USE		
Easy to learn	- .20	.97
Controllable	.19	.83
Clear & Understandable	- .04	.89
Flexible	.13	.63
Easy to become skillful	.07	.91
Easy to use	.09	.91

Table 3.1 The origins of TAM

In a related study among MBA students[26] using a word processing application, Davis et al. (1989) reduce (by dropping "more quickly", "easier", "clear and understandable" and "flexible to interact with") the six items to four items for each construct:

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26 The use of studies involving students in TAM research has been criticized by Legris et al. (2003).

USEFULNESS	EASE OF USE
1. Using WriteOne would improve my performance in the MBA program	1. Learning to operate WriteOne would be easy for me
2. Using WriteOne in the MBA program would increase my productivity	2. I would find it easy to get WriteOne to do what I want it to do
3. Using WriteOne would enhance my effectiveness in the MBA program	3. It would be easy for me to become skillful at using WriteOne
4. I would find WriteOne useful in the MBA program	4. I would find WriteOne easy to use

Usefulness is measured by comparing using an IS versus not using an IS (and therefore working in the same way), which leads to questions like "improve, increase". This is in line with Davis' original comment that the definition of useful is "capable of being used advantageously" (1989; p. 32). PEOU is measured by scales with only an expectation of the ease of use of the IS and is not related to alternatives.

In a 1995 research (Davis and Venkatesh, 1995) the questions for Usefulness remain the same; the wording for Ease of use has been changed (while using this time WordPerfect instead of WriteOne):
1. My interaction with WordPerfect is clear and understandable
2. Interacting with WordPerfect does not require a lot of my mental effort
3. I find WordPerfect easy to use
4. I find it easy to get WordPerfect to do what I want it to do

In extension to TAM, Venkatesh and Davis (2000) add Subjective Norm as a construct, based on Harwick and Barki (1994) who find that subjective norms are of influence in mandatory settings (and not in voluntary settings). In this so called TAM2 model, the items for measuring PU are similar; for measuring PEOU the following items are used:

1. My interaction with the system is clear and understandable
2. Interacting with the system does not require a lot of my mental effort
3. I find the system easy to use
4. I find it easy to get the system to do what I want it to do

This means two items have been changed, although the authors state "The TAM scales of perceived usefulness, perceived ease of use, and behavioral intention were measured using items adapted from Davis (1989) and Davis et al. (1989)." (Venkatesh and Davis, 2000; p. 194).

In the Unified Theory of Acceptance and Use of Technology (UTAUT) Venkatesh et al. (2003; including Davis) replace the construct Usefulness with the construct performance expectancy with the following items:

1. I would find the system useful in my job
2. Using the system enables me to accomplish tasks more quickly
3. Using the system increases my productivity
4. If I use the system, I will increase my chances of getting a raise[27].

The construct PEOU is replaced by Effort expectancy, which has the items:

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27 It is clear from the last item that the context in work/job related.

1. My interaction with the system would be clear and understandable
2. It would be easy for me to become skillful at using the system
3. I would find the system easy to use
4. Learning to operate the system is easy for me

In a number of academic papers the constructs PU and PEOU have been 'translated' into an online context as table 3.2 shows.

		PERCEIVED USEFULNESS	PERCEIVED EASE OF USE
Karahanna and Straub, 1999	Use of an e-mail system in an organization	1351. Communicate easily 2. Communicate quickly	1. Comfortable using E-mail
Agarwal and Karahanna, 2000	Use of world wide web	1. Using the Web enhances my effectiveness in college 2. Using the Web enhances my productivity 3. I find the Web useful in my college activities	1. Learning to operate the Web is easy for me 2. I find it easy to get the Web to do what I want it to do 3. It is easy for me to become skilful at using the Web 4. I find the Web easy to use
Gefen and Straub, 2000	Use of an online book website	1. ABC improves my performance in book searching and buying 2. ABC enables me to search and buy books faster 3. ABC enhances my effectiveness in book searching and buying 4. ABC makes it easier to search for and purchase books 5. ABC increases my productivity in searching and purchasing books	1. ABC is easy-to-use 2. It is easy to become skilful at using ABC 3. Learning to operate ABC is easy 4. My interaction with ABC is clear and understandable 5. It is easy to interact with ABC
Devaraj et al., 2002,	Online shopping	1. Shopping online gives me greater control 2. Shopping online improves the quality of decision making 3. Shopping online is a more effective way to make purchases 4. Overall, I find shopping online very useful	1. Overall, I believe that shopping online is easier 2. It is easy for me to shop online 3. My interactions during shopping online were clear and understandable 4. I believe that it is easy to do what I want to do while shopping online
Gefen et al., 2003a,	Online purchasing of books and CDs	1. The Web site is useful for searching and buying CDs/books 2. The Web site improves my performance in CD/book searching and buying 3. The Web site enables me to search and buy CDs/books faster 4. The Web site enhances my effectiveness in CD/book searching and buying 5. The Web site makes it easier to search for and purchase CDs/books 6. The Web site increases my productivity in searching and purchasing CDs/books	1. The Web site is easy to use 2. It is easy to become skilful at using the Web site 3. Learning to operate the Web site is easy 4. The Web site is flexible to interact with 5. My interaction with the Web site is clear and understandable 6. It is easy to interact with the Web site
Pavlou, 2003,	Use of a Web retailer of the respondents own choice	1. Overall, I find this retailer's Web site useful 2. I think this retailer's Web site is valuable to me 3. The content of this retailer's Web site is useful to me 4. This retailer's Web site is functional	1. My interaction with this retailer's Web site is clear and understandable 2. Interacting with this retailer's Web site does not require a lot of mental effort 3. I find this retailer's Web site easy to use 4. I find it easy to locate the information that I need in this retailer's Web site

		PERCEIVED USEFULNESS	PERCEIVED EASE OF USE
Chau and Lai, 2003	User acceptance of Internet banking	1. I can accomplish my banking tasks more quickly using Internet banking 2. I can accomplish my banking tasks more easily using Internet banking 3. Internet banking enhances my effectiveness in utilizing banking services 4. Internet banking enhances my effectiveness in utilizing banking services	1. Learning to use Internet banking is easy for me 2. I find it easy to use Internet banking to accomplish my banking tasks 3. Overall, I believe Internet banking is easy to use
Ahn et al., 2004,	Acceptance of Internet shopping malls	1. Using this Web enables me to accomplish tasks more quickly 2. Using this Web helps me to get better decisions 3. Using this Web improves the performance of my tasks 4. Using this Web saves me money 5. Using this Web increases my task productivity 6. Using this Web improves my task quality 7. Using this Web makes my job easier	1. Learning this Web site is easy for me 2. It will be impossible to use this Web without expert help 3. My interaction with this Web is clear and understandable 4. It is easy for me to become skilful at using this Web 5. Using this Web requires a lot of mental effort 6. I find it easy to get this Web to do what I want it to do 7. I find this Web site user friendly
Chen et al., 2004,	Acceptance of virtual stores	1. Using the virtual store would enable me to accomplish shopping or information seeking more quickly than using traditional stores 2. Using the virtual store would improve my performance in shopping or information seeking (e.g.. save time or money) 3. Using the virtual store would increase my productivity in shopping or information seeking (e.g. make purchase decisions or find product information within the shortest time possible) 4. Using the virtual store would enhance my effectiveness in shopping or information seeking (e.g. get the best deal or find the most information about a product) 5. Using the virtual store would make it easier for me to shop or find information 6. I find the virtual store very useful in my shopping or information seeking	1. Learning to use the virtual store is easy for me 2. I find it easy to use the virtual store to find what I want 3. My interaction with the virtual store is clear and understandable 4. I find the virtual store to be flexible to interact with 5. It is easy for me to become skillful at using the virtual store 6. I find the virtual store easy to use
Van der Heijden, 2004	Use of Dutch movie website	1. I can decide more quickly and more easily which movie I want to go see than in the past 2. I can better decide which movie I want to go see than in the past 3. I am better informed about new movies 4. I can decide more quickly and more easily whether I want to go see a particular movie or not 5. I can better decide whether I want to go see a particular movie or not	1. The interaction with <the system> is clear and understandable 2. Interaction with <the system> does not require a lot of mental effort 3. I find <the system> easy to use 4. I find it easy to get <the system> to do what I want it to do
Sundarraj and Wu, 2005	Use of online banking	1.It would enable me to get banking chores done more quickly 2. It would increase my productivity with money management 3. It would enhance my effectiveness in managing my accounts and in doing banking transactions 4. I would find it useful 5. It would make managing my accounts and doing my banking transactions easier 6. It would improve my life with banking	1. I would find it easy to use 2. Learning to operate it would be easy for me 3. My interaction with it would be clear and understandable 4. Getting it to do what I want to do with banking would be easy

		PERCEIVED USEFULNESS	PERCEIVED EASE OF USE
Wang and Benbasat, 2005	Use of online recommendation agents	1. Using this virtual advisor enabled me to find suitable digital cameras more quickly 2. Using this virtual advisor improved the quality of analysis and searching I performed to find suitable digital cameras 3. Using this virtual advisor made the search task for digital cameras easier to complete 4. Using this virtual advisor enhanced my effectiveness in finding suitable digital cameras 5. Using this virtual advisor gave me more control over the digital camera search task 6. Using this virtual advisor allowed me to accomplish more analysis than would otherwise have been possible 7. Using this virtual advisor greatly enhanced the quality of my judgments 8. Using this virtual advisor conveniently supported all the various types of analysis needed to find suitable digital cameras 9. Overall, I found this virtual advisor useful in finding suitable digital cameras	1. My interaction with the virtual advisor is clear and understandable 2. It is easy to get the virtual advisor to do what I want it to do 3. Learning to use the virtual advisor was easy 4. It was easy for me to find a suitable digital camera using the virtual advisor 5. Overall, I found that the virtual advisor is easy to use
Wu and Wang, 2005	Acceptance of Mobile Commerce (MC)	1. Using MC would improve my performance in online transactions 2. Using MC would increase my productivity in online transactions 3. Using MC would enhance my effectiveness in online transactions 4. Using MC would make it easier for me to engage in online transactions 5. I think using MC is very useful for me to engage in online transactions	1. I think learning to use MC is easy 2 I think finding what I want via MC is easy 3. I think becoming skilful at using MC is easy 4. I think using MC is easy
McKechnie et al., 2005	Use of the Internet for financial services	1. Provides sufficient amount of explanation 2. Provides the level of personal touch needed 3. Makes follow-up easier 4. Is safer 5. Provides the level of privacy needed 6. Provides me with sufficient control	1. How would you rate the internet in terms of "Easiness" 2. The Internet is easy to understand
Cheng et al., 2006	Consumer acceptance of the internet as a distribution channel in Taiwan	1. I believe it is more efficient in making a purchase by collecting information through the Internet 2. My purchasing performance may be improved by collecting information online.	1. Learning how to collect information through the Internet is easy. 2. There is no need to spend a lot of time becoming familiar with the process of collecting information.
Cho, 2006	Online legal services	1. Using online legal services would improve the flexibility in seeking legal services (e.g. by saving money) 2. Using online legal services would increase the efficiency of seeking online services (e.g. by making it possible to search for legal information more quickly) 3. Using online legal services would enhance the effectiveness of seeking legal services (e.g. by making it possible to find more information about a legal case) 4. Online legal services are very useful	1. It is easy to interact with the Internet 2. It is easy to shop on the Internet 3. It is easy to obtain services on the Internet 4. It is easy to learn how to seek legal services on the Internet 5. Online legal services would be easy-to-use
Hong et al., 2006,	Continued use of mobile Internet	1. Using mobile Internet helps me accomplish things more quickly 2. Using mobile Internet makes my life easier 3. I find mobile Internet useful in my life	1. Learning how to use mobile Internet is easy 2. Mobile Internet is clear and understandable to use 3. I find mobile Internet easy to use

		PERCEIVED USEFULNESS	PERCEIVED EASE OF USE
Pavlou and Fygenson, 2006	Getting information and purchasing online	1. This website would be useful for getting valuable information/purchasing this product 2. This website would enhance my effectiveness in getting useful information about this product/purchasing this product	1. Getting information about this product from this website is easy/purchasing this product from this website would be easy 2. Learning how to get information about this product/how to purchase this product from this website/web vendor would be easy
Son et al., 2006	Use of an online infomediary	1. Without using Bizrate.com Website, I would have to spend more time to find out who are selling the product online 2. Without using Bizrate.com Website, I would have to spend more effort to find out who are selling the product online 3. Without using Bizrate.com Website, I would have to visit many websites to find out who are selling the product online. 4. Using Bizrate.com Website improved the quality of my decision making in online shopping of the product 5. Using Bizrate.com Website gave me greater control over online shopping of the product 6. Using the Website enabled me to make a more informed decision in shopping the product online 7. I believe that using Bizrate.com Website is a more effective way of shopping the product online	1. My interaction with Bizrate.com Website was clear and understandable 2. I found Bizrate.com Website easy to use 3. I was able to easily locate the information that I needed in Bizrate.com Website
Cyr et al., 2007	Browsing an e-Services website for concert tickets	1. The website provides good quality information 2. This website improves my performance in assessing entertainment choices 3. This website increases my effectiveness for entertainment choices online 4. This website is useful for assessing entertainment choices online	1. This website is easy to use for concert assessment 2. I can quickly find the information I need on this website 3. This is a user-friendly website 4. My interaction with this website is clear and understandable
Herrero and Rodriguez del Bosque, 2008b	Intention to shop on the Internet	1. Using the Internet to purchase in the next 6 months would make shopping process easier 2. Using the Internet to purchase in the next 6 months would enable me to shop more quickly 3. Using the Internet to purchase in the next 6 months would be useful to get better purchases 4. Using the Internet to purchase in the next 6 months would enhance my shopping effectiveness	1. Using the Internet to purchase in the next 6 months would be easy to learn for me 2. Using the Internet to purchase in the next 6 months would be easy to do for me 3. Using the Internet to purchase in the next 6 months would require a lot of mental effort 4. Using the Internet to purchase in the next 6 months would be easy following the instructions provided in virtual shops
Ozdemir et al, 2008	Internet banking	1. Using Internet banking is useful for conducting my banking activities 2. Using Internet banking makes it easier to conduct my banking activities	1. Learning to operate Internet banking is easy 2. Internet banking is easy to use
Kim and Son, 2009	Use of portals	1. Using the portal site enhances my effectiveness 2. Using the portal site enhances my productivity 3. Using the portal site improves my performance	1. Interacting with this website does not require a lot of mental effort 2. I find it easy to get the website to do what I want it to do 3. I find the website easy to use
B. Kim et al., 2009	Use of mobile data services (MDS)	1. Using MDS would help me accomplish tasks more quickly 2. Using MDS would enhance my task effectiveness 3. Using MDS would make it easier to do my tasks 4. Overall, using MDS would be useful	1. Learning how to use MDS would be difficult for me 2. It would be difficult for me to become skilful at using MDS 3. My interaction with MDS would be unclear 4. Overall, using MDS would be easy for me

		PERCEIVED USEFULNESS	PERCEIVED EASE OF USE
Gu et al., 2009	Mobile banking	1. Using this mobile banking enhances the efficiency of my banking activities 2. Using this mobile banking makes it easier to do my banking activities 3. Using this mobile banking enables me to accomplish my banking activities more quickly	1. Mobile banking is easy to use 2. Learning to operate mobile banking is easy

Table 3.2 Use of TAM constructs

The items used are in general still related to the original items formulated by Davis. A problem is that the abstract construct of PU is measured in abstract questions like "increase performance", "enhance productivity" or even more general phrasing like "is useful", which should be translated into tangible attributes like speed or costs. This has led several researchers (e.g. Gefen and Straub, 2000; Pavlou, 2003; Van der Heijden, 2004; Wang and Benbasat, 2005) to adjust the questions to multichannel use. However the theoretical implications of these adjustments are not stated. Changing the attributes means one is using TAM in name only, because the essential feature of TAM is that it uses the same attributes for the adoption of every IS; perhaps the reason that TAM has been called too parsimonious (Schierz et al., 2010).

Another issue is the difference between the original TAM application (working environment) and multichannel behavior. Several other disciplines (for instance marketing, decision behavior research) show there is a difference between deciding in an organizational context and in a consumer context[28]. This is among others caused by differences in goals directed behavior in which behavior can be seen as the means to achieve certain ends. In a consumer context these ends differ from the ends in an organizational context and it has been shown that consumer behavior itself can be differentiated according to goals (e.g. Bagozzi and Dholakia, 1999; Wolfinsbarger and Gilly, 2001). This implies that the reasons for adopting an IS are related to the goals, which means that different goals lead to different reasons for using an IS and therewith making it impossible to use the same reasons (attributes) as TAM suggests for every behavior (cf. Chen and Mort, 2007). A third important shortcoming is related to the fact that in working situations the choice is between using and not using the Information System, where in the multichannel context the use either replaces the use of other channels or the use is complimentary to the use of other channels. This means that the decision whether to use the new channel will depend not only on the evaluation of the new channel but also on the comparison of this new channel with the existing channels. And, even more important, that using one channel does not mean that the other channels are not used anymore (cf. Ortiz de Guinea and Markus, 2009). This implies that channels are compared with each other on the relevant attributes, which means that relevant attributes also depend on the considered channels. For instance: if one considers the Internet as a channel, the possibility of conducting the transaction whenever one wants (regardless of opening hours) might become relevant; consumers only considering the face-to-face channel will not include this as a relevant attribute. This means that it is very difficult to limit the attributes to the existing channels (cf. Fishbein and Ajzen, 2010).

Following Churchill (1979) there are enough reasons, based on the literature review, to include other research, besides TAM related research, to decrease the chance of omitting relevant attributes. As channels, like products, can be seen as bundles of attributes (Michaelidou et al., 2005) the reviewed literature has been extended with literature in which attributes play an important role. Three strands of research are of relevance:

28 In marketing this has led to the notion of business-to-business marketing as opposed to business-to-consumer marketing and the notion of organizational buying behavior as opposed to consumer buying behavior (e.g. Kotler, 1980, 2003; Biemans, 2000; Verhage, 2010; see also Simon, 1979).

- IS literature. It concerns here the literature related to the use of new ICT enabled channels, as the reasons for adopting IS might be seen as attributes. In the literature on eCommerce there has been much attention for the advantages and disadvantages of using the Internet as a distribution channel compared to other channels. Although not mentioned explicitly it is obvious that these advantages and disadvantages are related to the attributes: these characteristics of the channel are important for the consumer in choosing the channel.
- Customer satisfaction literature. Consumers will evaluate the channel on elements they find important and on elements in which the channels differ from each other. Therefore the list of attributes can be obtained from customer satisfaction literature, that is based on the assessment of the quality of the products or services and it can be argued that this satisfaction will be based on criteria that are relevant for the customer. These criteria are similar to attributes in channel choice (cf. Gardial et al., 1994, for product choice).
- Channel choice literature. In the channel choice literature the advantages and disadvantages of the channels are distinguished (i.c. the literature on ICT enabled channels like the Internet), which are similar to the attributes (if consumers choose a channel for its advantages, these advantages must have a meaning to the consumer).

In table 3.3 the attributes, advantages and reasons for using a channel mentioned in the relevant strands of literature are summarized.

INFORMATIONS SYSTEMS		CUSTOMER SATISFACTION	CHANNEL CHOICE
Tam literature related to ICT enabled channels	Other theories related to ICT enabled channels	Service quality literature related to ICT enabled channels	Marketing literature related to ICT enabled channels
Gefen and Straub, 2000; Agarwal and Karahanna, 2000; Childers et al., 2001; Bhattacherjee, 2001a; Devaraj et al., 2002; Gefen et al., 2003a; Pavlou, 2003; Ahn et al., 2004; Hsu and Chiu, 2004; Chen et al., 2004; Keen et al., 2004; Van der Heijden, 2004; Wu and Wang, 2005; Hampton-Sosa and Koufaris, 2005; Chang et al., 2005; Cheng et al., 2006; Hong and Tam 2006; Cyr et al., 2007; Yang et al., 2007; Ozdemir et al., 2008; Chiu et al., 2009	Liang and Huang, 1998; Yen, 2005; Chang et al., 2005; Nysveen et al. 2005b; Pavlou and Fygenson, 2006; Choudhury and Karahanna, 2008; Kim and Son, 2009	Yen, 2005; Parasuraman et al.,2005; Al-Hawari, 2005; Collier and Bienstock, 2006; Sousa and Voss, 2006;	Jones and Biassiotto, 1999; Kiang et al., 2000; Morganosky and Cude, 2000; Pechtl, 2003; Gupta et al., 2004; Koufaris et al., 2001; Poon, 1999; Zeng and Reinartz, 2003; Peck and Childers, 2003; Moe and Fader, 2004; Eriksson and Nilsson, 2007
Performance	Convenience	Efficiency	Assortment
Speed	Trust	Fulfillment	Information available
Effectiveness	Efficacy of information acquisition	Availability (of the system)	24/7 availability
Easier	Efficiency	Privacy	Social interaction
Productivity	Ease of use	Ease of use	No waiting
Useful	Performance	Information accuracy	No transportation time
Greater control	Perceived control	Functionality	Chance of a better deal
Quality of decision making	Convenience		Perceived risk
Better decisions	Perceived risk		Switching costs
Saves money	Time saving		No physical inspection

Ease of use	Service quality		Delivery time
Perceived usefulness	Time and place independent		Shopping enjoyment
System quality	Queue avoidance		Product quality
Information quality	Subjective norm		Communication cost
Service quality	Enjoyment		Convenience
Trust	Uncertainty		Communication time
Perceived risk	Switching costs		Transaction cost
Enjoyment			Transaction time
Social Presence			Security
			Delivery cost
			Delivery time
			Post-sale service

Table 3.3 Mentioned attributes in relevant strand of research

These items represent different levels of reasons to use as they represent different levels of abstraction (cf. Wixom and Todd, 2005). Some are real attributes (characteristics) of the channel (e.g. speed), while others are the results of those attributes (e.g. time saving). And in some cases the mentioned attribute is more or less a desire of the consumer (e.g. efficiency). This problem of measuring attributes has been noticed long before the coming of eCommerce (e.g. Hansen, 1969) and has been captured in a theoretical framework: means-end theory, where the more or less concrete attributes are the means, which lead to more abstract consequences (the perceived benefits or costs), which in their turn lead to the highly abstract personal values, the ends (Klenosky et al., 1993). Values can be defined as "an enduring belief that a particular mode of conduct or that a particular end-state of existence is personally and socially preferable to alternative modes of conduct or end-states of existence" (Rokeach, 1968; p. 550). Where the multi-attribute model focuses on *if* and to *what* degree attributes are important, the means-end framework focuses on *why* and *how* the attributes are important (Klenosky et al. 1993).

The means – end model (Gutman, 1982) builds upon insights in the psychology (Rosenberg, 1956, Rokeach, 1968, 1973) and marketing (Young and Feigin, 1975; Vinson et al., 1977; Howard, 1977) and has been used in a number of studies with topics ranging from beverages (Gutman, 1984; Zeithaml, 1988), advertising (Gengler and Reynolds, 1995; Reynolds and Whitlark, 1995), leisure (Klenosky et al., 1993), pre and post purchase product evaluation (Gardial et al., 1994), recycling (Bagozzi and Dabholkar, 1994), international standardization of marketing programs for a clothing manufacturer (Botschen and Hemetsberger, 1998), voting (Reynolds, 2006), breakfast choices (Manyiwa and Crawford, 2002), software evaluation (Wong, 2002), information systems research (slightly adjusted, Peffers et al., 2003; Schultze and Avital, 2011) and more recently choice of an employer (Van Rekom and Wierenga, 2007), Internet banking (Kuisma et al., 2007; Laukkanen, 2007a, 2007b) and mobile multimedia (Leitner et al., 2008).

It can be modeled as follows: (Gutman, 1982; Reynolds and Gutman, 1988; p. 12; Gardial et al., 1994; Reynolds, 2006; Laukkanen, 2007b; p. 791; Kuisma et al., 2007; p. 78):
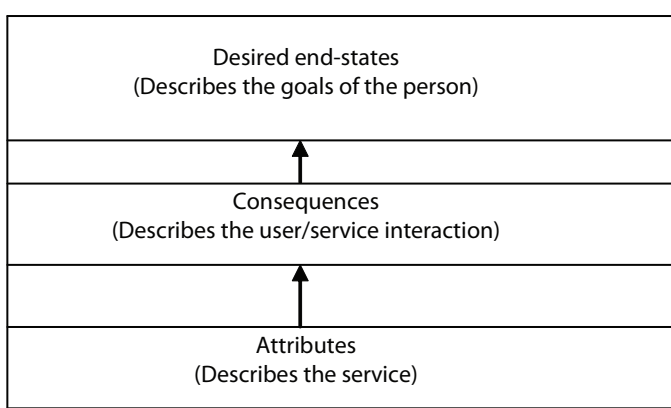
Figure 3.5 The means-end model

Using this model, the items can be regrouped as follows:

END-STATE	CONVENIENCE/ EFFICIENCY	UNCERTAINTY REDUCTION	FULFILLMENT (OUTCOME)	SOCIAL STATUS	ENJOYMENT
Consequences	Performance, Control, Cheaper, Time saving, Waiting, Transportation time, Communication time, Communication costs, Transaction costs, Transaction time, Delivery cost, Delivery time, Switching costs, Queue avoidance	Trust, Security	Change of a better deal, Cheaper, Quality of decision making, Better decisions,	Subjective norm	Social interaction, Social presence
Attributes	Easy, Ease of use, Functionality, Availability, Efficacy of information acquisition, Assortment, Information available, Time and place independent	Physical inspection, Post sale service, Privacy, Information accuracy,	Information quality, System quality, Product quality		

Table 3.4 Mentioned attributes in a means-end framework

This literature review shows that a large variety of relevant attributes has been found, indicating that the TAM constructs might not be applicable in explaining the use of channels in different contexts. In most of the eCommerce research, TAM constructs have been extended with a number of other constructs, which are usually related to other theoretical models, indicating TAM's wide recognition on the one hand and some dissatisfaction with TAM to explain the use of distribution channels on the

other hand. The Technology Acceptance Model has been extended in three primary ways (Wixam and Todd, 2005; p. 86). The first way is extending the model with factors from other related models, such as subjective norm, perceived resources, perceived behavioral control and Transaction Cost Economics (e.g. Gefen, 2000; Mathieson et al., 2001; Chen et al., 2004; Chen and Tan, 2004; Carter and Belanger, 2005; Cho, 2006; Son et al., 2006; Pavlou and Fygenson, 2006). A second approach is adding other belief factors to the model, like trust (Kim et al. 2004; Hampton-Sosa and Koufaris, 2005; Wang and Benbasat, 2005, 2007, 2008; Cyr et al., 2007) and fun (Weijters et al., 2007). A third approach has been the extension with external variables, like personality, demographic characteristics and system characteristics (e.g. Chau and Lai, 2003; Gardner and Amoroso, 2004; Yi et al, 2005/2006). The external variables are mentioned in the model of Davis et al. 1989 (p. 985), but they do not mention system characteristics. The extensions can be included as follows in TAM:
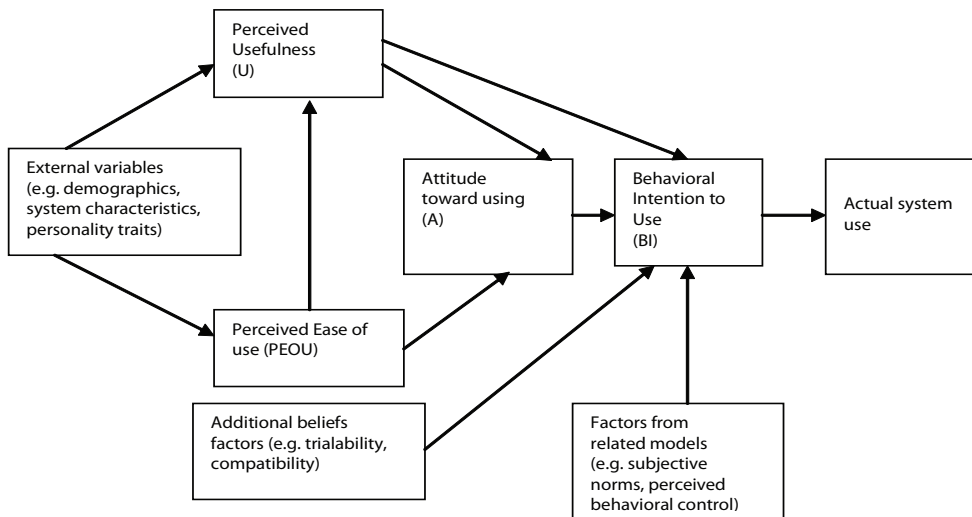
Figure 3.6 Extensions to the Technology Acceptance Model (Wixam and Todd, 2005)

The conclusion is obvious: it is necessary to deviate from TAM and define the relevant attributes for the specific context. It is not surprising that TAM does not take into account all relevant channel consequences. This was not the purpose of TAM's creator Davis. TAM has been developed for the use of an IS within a working context and therefore it excludes several end-states that are relevant in a consumer context. However, by a large number of authors TAM's constructs have been used for consumer channel behavior. This is contrary to the opinion of Fishbein and Ajzen (e.g. 1975, 2010), whose theories (Theory of Reasoned Action and Theory of Planned Behavior) form the basis of TAM. They state that for every research the relevant attributes have to be gathered anew by qualitative research among the target group. This is what Davis has done while creating TAM. Ironically the followers of TAM have not followed the 'founding' fathers in this regard and have used TAM's constructs for completely different behavior and target groups. The next step therefore is going to the basic principles of the theoretical foundations: conducting qualitative research to determine attributes of channel use regarding the use of channels.

As has been mentioned in chapter 1, this thesis is restricted to services. This restriction is necessary, as research has shown that differences between services and products are important in the use of a channel. However, for the purpose of generating the important attributes the notion of services is too broad, given the wide variety of services. Services can for instance be characterized by asking the following questions (Lovelock, 1984):

- what is the nature of the service act;
- what type of relationship does the service organization have with its customers;
- how much room is there for customization and judgment on the part of the service provider;
- what is the nature of the demand for the service;
- how is the service delivered;
- what are the attributes of the service product.

Other classifications have been used (e.g. Schmenner, 1986; Kyl et al., 1988; Bitner, 1992; Watson et al., 1998; De Vries, 2003) and research (Black et al., 2002) finds a relation between service complexity and the use of a channel, confirming earlier research of Morrison and Roberts (1998); a similar conclusion is drawn by Durkin et al., (2008). This means that the important attributes differ per service and that it is therefore not possible to generate the important attributes by asking respondents about services in general. In this thesis financial services are used to generate the attributes and conduct the pilot research. The choice for financial services is based on the developments in the industry and the developments in the academic fields. Studies have shown that the financial services industry has been innovating by means of ICT enabled channels since the introduction of the ATM and has employed a multichannel strategy since some time (Cortinas et al., 2010). The relevance of this industry for studying channel behavior is confirmed by recent research on Internet banking (Vroomen et al., 2006; Eriksson and Nilsson, 2007; Yiu et al., 2007; Liao and Cheung, 2008; Mäenpää et al., 2008; Shamdasani et al., 2008; Laukkanen et al., 2009; Lee, 2009; Ozdemir and Trott, 2009; Agarwal et al 2009), mobile banking (Lee and Chung, 2009; Lin, 2011; Zhou et al., 2010) and multichannel banking (Calisir and Gumussoy, 2008; Cortinas et al, 2010).

3.4 The laddering research[29]

The method used for finding the attributes in the means-end models is laddering (e.g. Vriens and Ter Hofstede, 2000; Wansink, 2003; Van Rekom and Wierenga, 2007), which is the most widely applied method (Reynolds, 1985; Ter Hofstede et al., 1998) and has been used in a variety of domains ((Rugg et al., 2002). In Table 3.5 a number of relevant surveys using the means-end model is summarized.

ELICITATION AND SELECTION OF ATTRIBUTES	SAMPLE AND RESEARCH METHOD	SUBJECT	ANALYTICAL TOOLS	PUBLICATION
Consumption of drinks, occasions in which consumed, how much and why. The latter question the beginning of the laddering process (difference by occasion)	80 students; single face-to-face interview, 30-45 minutes	beverages	Hierarchical Value Structure	Gutman, 1984
Triad sorts (similar brands divided in sets of three; distinction among them)	30 in-depth interviews	quality of beverages		Zeithaml, 1988

29 The laddering research has been conducted by Sander Terstegen, employee ASR Verzekeringen and (during the time of the research) student Master Business Information Systems, University of Amsterdam. He conducted the research for his master thesis.

Preference oriented sorting task by choosing among alternative ski resorts; respondents were asked which resorts they had visited from a list of 33 resorts; interviewer picked random 3 resorts they had visited and asked which of the three they preferred and why	90 visitors of ski show; face-to-face, 20-30 minutes	ski holiday	Hierarchical Value Structure	Klenosky et al., 1993
Provide motives for recycling, why these motives were important	133; telephone interviewing	recycling	Hierarchical Goal Structure	Bagozzi and Dabholkar, 1994
What beverage do you drink while studying for a test. What benefit, how does this increase the effectiveness of your studying; what goal by studying, why important (structured consequences based on the occasion)	84 students; self-administered laddering questionnaire	beverages during study	Hierarchical Goal Map	Gutman, 1997
Literature review, extensive questioning on the product and repertory grid task to generate list of attributes; respondents were asked to indicate importance on a 3-point scale; three very important and two rather important attributes were chosen	300	food products		Ter Hofstede et al., 1998
Difference between product and related products; importance of the difference	50 laddering interviews	advertising for apples	Hierarchical Value Map	Bech-Larsen, 2001
List of attributes made by researchers, because subject (house) knows no brands	10 in depth interviews	housing attributes	Hierarchical Value Map	Coolen and Hoekstra, 2001
Direct elicitation: in what ways is this food product different from this or that; what makes this foodstuff rather than this or that important or special to you	In depth interviews, face-to-face	breakfast products		Manyiwa and Crawford, 2002
Items based on qualitative study; 7 point Likert scales	403 users and developers; Internet survey	software quality evaluation	Correlation matrices	Wong, 2002
Mentioning the relevant distinctions between effective and ineffective sales managers; ranking the attributes in importance	51 in-depth interviews, also by telephone	sales manager effectiveness	Hierarchical Value Map	Deeter-Schmelz et al., 2002
Triadic sorting, preference-consumption differences and open-ended questioning	15 in depth interviews, two phases (elicitation and laddering)	food retailers	Hierarchical Value Map	Devlin et al., 2003
Attributes based on the ideal product (vacation or sport shoes)	66, written questionnaire	vacation trips and sport shoes		Huber et al., 2004

Attributes to which the respondent would pay attention when buying the product; most important (maximum of five) attributes were laddered	72 (35 + 37) in depth interviews	telephones and clock radio		Snelders and Schoormans, 2004
Focus group discussion and literature; pre defined attributes and consequences	45 respondents in the computerized laddering; 46 respondents in pencil and paper laddering	choosing breakfast for children	Hierarchical Value Map	Russell et al., 2004
Differences between two varieties	Personal interviews: 30 in UK and 30 in Denmark	pork		Grunert and Bech-Larsen, 2005
Perceived distinctions of ATM and Internet as payment channels; why is that important to you	30 clients of a bank, face-to-face	Internet banking	Hierarchical Value Map	Kuisma et al., 2007
Not specified	28 consumers	use of channels regarding leisure travel preparations	Narrative descriptions	Van Dijk et al., 2007
Rank (employers) in order of preference; criteria why they preferred number one to number two, number two to number three et cetera	study 1: 136 students, paper questionnaire; study 2: 146 employees, paper questionnaire	study 1: potential employer; study 2: on the job motivation in a software house	Hierarchical Value Map	Van Rekom and Wierenga, 2007
Mention four characteristics your ideal store has	40 in depth interviews	Apparel shopping	Hierarchical Value Map	Wagner, 2007
	20 experienced Internet and mobile-banking customers	Internet versus mobile banking		Laukkanen, 2007a
Distinctions between perceived advantages and disadvantages of electronic channels currently and previously used	20 in depth interviews, clients of a bank	Internet versus mobile banking (fund transfer)		Laukkanen, 2007b
Respondents mentioned basic device characteristics of their own multimedia devices; then the characteristics had to be rated from very important to me to not important to me; the four with the highest score were chosen	24 (of which 12 students); 1 ¼ hours length	Mobile multimedia device	Hierarchical Value Map	Leitner et al., 2008

Table 3.5 Summary of means-end research

Research subject

The research subject is the use of channels for financial services. Respondents are asked about their use of channels for financial services as money transfer, saving accounts, buying/selling of stocks. Initially respondents were asked about the channels used during the last month; it became clear however that respondents are able to recall experiences with channels regarding a longer period. The period has been expanded to include more channels, as the most recent used channel was primarily the Internet.

Finding the attributes

As is obvious from Table 3.5 several methods have been used to 'get started'. The most often used methods are ranking, triad sorting and naming advantages/disadvantages. By ranking respondents are asked which product they prefer, which one second and so on. The next question is why they prefer number one to number two; number two to number three et cetera (cf. Breivik and Supphellen, 2003). With triad sorting the brands or products are presented to the respondents per three and the respondent mentions which two products are the same on which criterion and on which they differ from number three. Naming advantages and disadvantages is obvious: per brand/ product mentioning the (dis)advantages.

These methods have been applied to channel choice (Devlin et al., 2003; Kuisma et al., 2007; Laukkanen 2007a, 2007b; Wagner, 2007; Calisir and Gumussoy, 2008). Given the tentative character of this stage in the research, the goal of this stage is to generate as many as possible attributes. Therefore at first the method used has been the mentioning of dis(advantages) regarding the channel(s) used (cf. Ajzen and Fishbein, 1980). This method should lead in theory to the largest number of attributes, given the fact that there are no limits to the number a respondent may mention. It also avoids one of the mentioned pitfalls (Veludo-de-Oliviera et al., 2006) of laddering: the focus on positive attributes, consequences and end-states, therewith ignoring the fact that some choices are made based on avoidance of perceived negative characteristics. After conducting a number of interviews it became obvious that most of the respondents used the Internet for their banking affairs. This meant that most of the mentioned advantages and disadvantages are attributes related to this channel. To avoid this bias (as the focus is on attributes of all channels) a second method has been used: ranking the channels according to preference and mentioning the difference between number one and two, two and three and so on. This resulted in a larger number of discussed channels per respondent.

Selection of the attributes

There is hardly any guidance on the number of attributes to be included in the interview, which can be attributed to the lack of consensus on the (maximum) interview time. In previous research this interview time has varied between 20 minutes (Klenosky et al., 1993) and 75 minutes (Leitner et al., 2008). To avoid long-windedness (Veludo-de-Oliveira et al., 2006) in this research the maximum interview time of 30 minutes has been taken as a limit. It was expected that during that interview time four attributes could be discussed. It appeared however that in most interviews more attributes could be discussed within the limit of 30 minutes.

Laddering technique: soft or hard laddering

Laddering can be divided into soft and hard laddering. Soft laddering refers to an interview in which the respondent is restricted as little as possible, whereas in hard laddering the interviews are structured to produce ladders one by one (Grunert and Grunert, 1995; Russell et al., 2004). The advantages of hard laddering are time efficiency, faster administration and lack of social pressure

for the respondents (Russel et al., 2004). Voss et al. (2007) use the soft and hard laddering version and compare the results. They find, in searching the desired teaching qualities of lecturers, that soft laddering (with an interviewer) leads to more results. These results consist of a higher average number of attributes, consequences and values per person and also in reaching a higher level of abstraction. Botchen and Thelen (1998) come to a different conclusion and state that hard laddering gives the same results as soft laddering.

In this research half of the interviews has been done by soft laddering; half of the interviews has been done by hard laddering. The choice of the use of hard laddering is based on the possibility of future research. If the research is repeated in other industries, the use of hard laddering is preferable, given the time efficiency. Therefore it is of interest to evaluate the results of the hard en soft laddering interviews (see Table 3.6).

Sample size and sample population

A problem in qualitative research is that the sample size is based on the actual results: as theoretical saturation is reached, the necessary sample size is reached (Voss et al., 2007). Based on the sample sizes of related research (Kuisma et al., 2007; Wagner, 2007; Laukkanen, 2007a, 2007b; Leitner et al., 2008) a sample size of 30 respondents was chosen. The sample population consists of 30 respondents in the age group 20 to 60 years. Overall, the group is relatively young, highly educated and employed.

Questionnaire

For soft laddering interviews the usual method (see Sørensen and Askegaard, 2007) was used: for every mentioned attribute: why is that important; for every answer to that question: why is that important, until the level of end states was reached (according to the interviewer). For the hard laddering questionnaire the method of Botschen et al., 1999) was used and the number of laddering levels was increased to four (instead of three).

Research period

The fieldwork has been conducted in November and December 2008. Sander Terstegen has conducted a total of 15 soft laddering interviews.[30]

3.5   The results

The used methods

The soft laddering interviews have been recorded and have been coded afterwards by the interviewer. The hard laddering interviews have been coded on the filled in questionnaire. In table 3.6 the results are summarized for the different methods used:

	SOFT LADDERING ADVANTAGE METHOD	SOFT LADDERING SEQUENCE AND DIFFERENCE METHOD	HARD LADDERING ADVANTAGE METHOD	HARD LADDERING SEQUENCE AND DIFFERENCE METHOD
No. of unique attributes	6	7	6	6

30 The first five interviews have been conducted by Terstegen while being observed by the author of this thesis. After the evaluation of these interviews and the confirmation of his capabilities in this field, Terstegen conducted the remaining 10 interviews by himself.

No. of unique consequences	13	15	10	9
No. of unique end states	6	5	4	3
Extra attribute(s)	Safety	Speed; Traveling time	Safety; Speed	--
No. of mentioned attributes	15	30	30	20
No. of mentioned consequences	26	65	40	25
No. of mentioned end states	12	25	9	6

Table 3.6 Results per used method

Hard versus soft laddering

Soft laddering and hard laddering interviews resulted in almost similar attributes and end-states, although the number is slightly higher in soft laddering interviews. However, on the consequence level soft laddering resulted in more and more diverse results. Another important difference in results is the relations between attributes, consequences and end-states. In hard laddering these relations are almost linear; in soft laddering these relations are more like a spider-web. Soft laddering is superior to hard laddering when it comes to 'finding' the end states, which is not surprising given the fact that a large number of respondents are consciously unaware of these end states.

These results seem to favor the soft laddering method. However, in line with Russel et al. (2004) it can be argued that the impact of the researcher is higher in soft laddering. In reporting the results in the almost standard used (see figure 3.7) Hierarchical Value Map, the researcher has to cluster and interpret the attributes and especially consequences to come to a readable overview. This usually leads to the dropping of the attributes/consequences and end states that are mentioned incidentally, therewith creating results that hardly differ from the hard laddering method.

(Dis)advantages versus sequence of preference

When used with the soft laddering interviews the sequence and difference method results in more and more diverse attributes. This is due to the fact that in soft laddering the preference method leads to more attributes per respondent than the (dis)advantage method. Many respondents are only able to mention two (dis)advantages, while they have no problem mentioning more differences. Interesting this is different when using the hard laddering method. Here the "advantages method" gives more and more diverse results; even outperforming the soft laddering/advantage method (except for the number of end-states). This can be partly explained by the method: with hard laddering respondents can take their time, with soft laddering they are faced with an interviewer; a situation that gives pressure.

The attributes, consequences and end states

In figure 3.7 the total results are presented in the often used Hierarchical Value Map (HVM). In this HVM only attributes, consequences and end states that have been mentioned at least five times are included. The results are in line with previous research in the use of channels for financial services (Lockett and Littler, 1997; Polatoglu and Ekin, 2001; Black et al., 2001, 2002; Howcroft et al., 2002; Karjaluoto et al., 2002; Laukkanen, 2006). At the consequence level saving time is the most important, followed by knowing how it goes (control) and time independence.
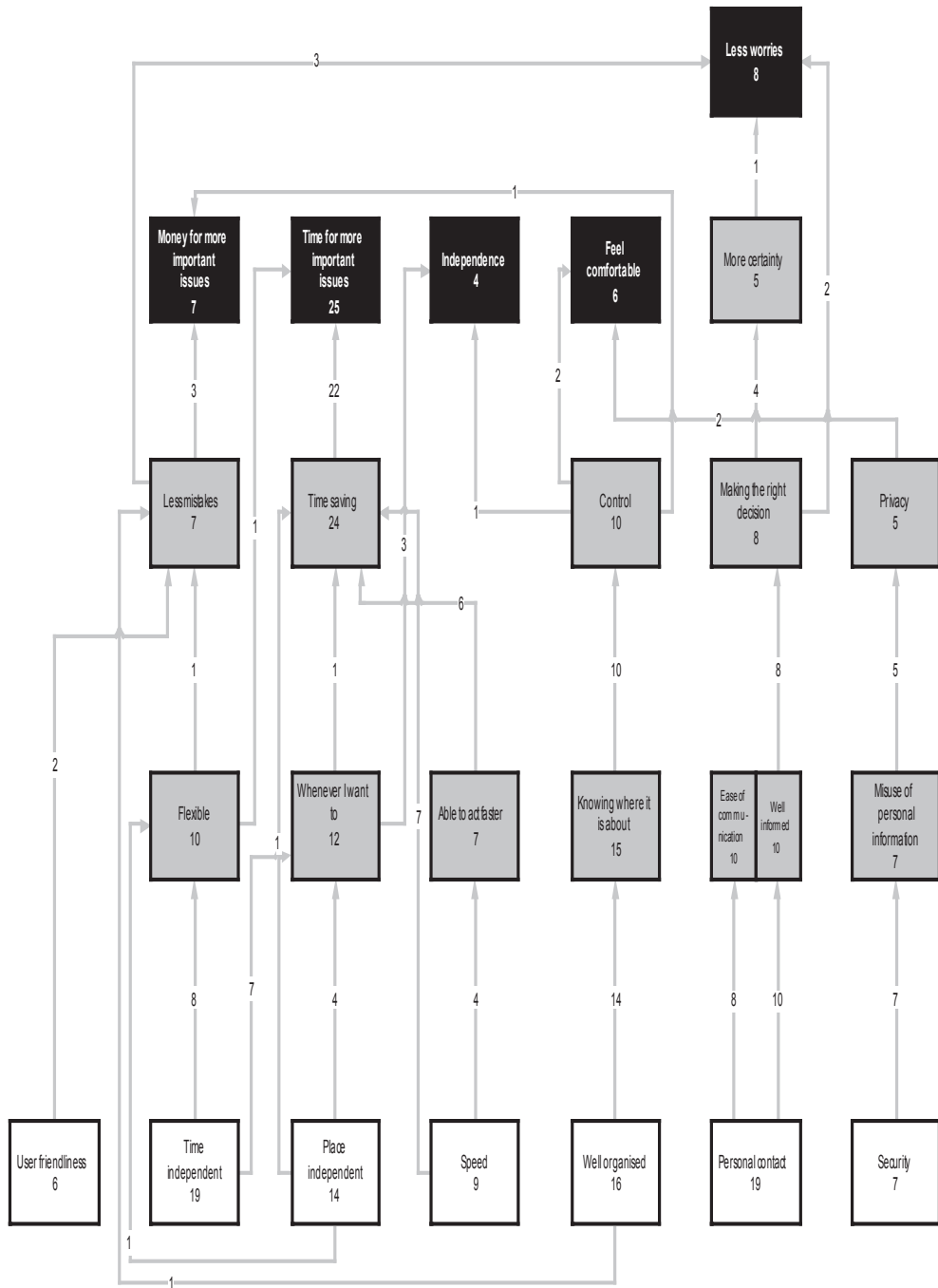
Figure 3.7 Hierarchical Value Map of the results of the laddering interviews (Terstegen, 2009)

Compared with the literature review (see table 3.4), there are many similarities on every level:

	LADDERING INTERVIEWS	LITERATURE REVIEW
Attributes	User friendliness	Functionality
	Time and place independent	Availability
	Speed	Efficacy of information acquisition
	Well organized	Information available
	Security	Privacy
	Personal contact	Information accuracy and – quality
Consequences	Control Knowing where it is about	Control
	Time saving	Time saving
	Time saving	Transportation time
	Time saving	Communication time
	Able to act fast(er)	Transaction time
	Well informed Ease of communication	Quality of information
	More certainty	Quality of information
	Making the right decision	Better decisions
	Misuse of personal information Privacy	Security
	Flexible	
	Less mistakes	
End states	Convenience/efficiency	Time for more important issues Money for more important issues
	Risk avoidance	Less worries
	Fulfillment	Feel comfortable

Table 3.7 Comparison results laddering interviews and literature review

A number of attributes mentioned in the literature is missing in the laddering interviews: assortment, physical inspection and post-sales service. This is no doubt related to the use of financial services in the laddering interviews; the missing attributes are especially product oriented. At the consequences

level in the laddering interviews trust is missing. It has been mentioned only once in the laddering interviews. This is surprising, given the attention it has received in the research on ICT enabled channels. Two explanations can be offered.

First trust can be seen as an element that is closely related to perceived risk (Mayer et al., 1995; Gefen et al., 2003b; Kong and Hung, 2006; McKnight et al., 2004; Newholm et al., 2004; Schoorman et al., 2007; Büttner and Göritz, 2008; for a empirical validation e.g. Cho, 2006), given the fact that high trust means low perceived risk. In the literature it has been found that experience with a channel (e.g. Internet) results in a lower perceived risk of the use of that channel (e.g. Miyazaki and Fernandez, 2001; Schoenbachler and Gordon, 2002; Ueltschy et al., 2004; Beldad et al., 2010). This would imply that trust is related to consumer characteristics like experience, category knowledge (Swaminathan, 2003). Given the used sample for the laddering interviews this might be an explanation: all respondents have experience with the channels and have used them often, therewith diminishing the importance of trust for this group of consumers.

A second explanation might be the fact that trust is also related to the relation with the brand (Erdem and Swait, 2004; Erdem et al, 2006) and the organization (Salam et al., 2005), in this situation the bank. This is in line with the reasoning within the social exchange literature in which it is suggested that trust might be the result of reputation; reputation based on previous relations and the length of the attachment (Young-Yabaraa and Wiersema, 1999). It has been found that the reputation of and the experience with a retailer are of influence on trust (Biswas and Biswas, 2004; Thatcher and George, 2004). It is important to make a distinction between trust in the supplier and trust in the channel (the Internet), which might be different. Trust in the supplier can be seen as institutional based (guarantees, appearance) and relational (outcome of former interactions) and will not differ online and offline. If one trusts a retailer, one will trust that same retailer online. However: providing information on the Internet might not only arrive at the trusted party, but might also be intercepted by others (Crosno et al., 2007). It can be argued that the trust in banks is by definition high[31] and therewith transferred to the use of the channels of that bank.

Two end-states based on the literature are missing in the laddering interviews: enjoyment and social status. This lacking of the end-state enjoyment might be attributed to the nature of financial services, which can hardly been seen as positive reinforcement services (see Widrick and Hibbs, 1985; Perotti et al., 2003); during the laddering interviews it became clear that conducting financial transactions is seen as important but also seen as necessarily. The lacking of the end-state social status (and at the consequences level subjective norm) is more difficult to explain. It might be related to the use of the channels: the respondents have been using the channels for some time and it can be argued that the channel choice has become a habit. When using a new channel, subjective norm and status might have played a role; nowadays this is of no importance in choosing the channel. This would imply that subjective norm is only of importance when trying a new channel. This is in line with Thompson et al. (1994), who state that experience moderates the effects of antecedent factors on intentions and behavior; social norms will be of more importance if the behavior is new, experience will have a moderating influence on the effect of social norms (also cf. Ventaketsh and Davis, 2000; Venkatesh et al., 2003).

Based on the laddering interviews, the following attributes have to be included in the model:
1. Information quality (well informed)
2. Quality of the decision making (making the right choice; more certainty)
3. Quality of process (less mistakes)

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31 Ironically the fieldwork was done in a period in which, due to the credit crisis, the credibility of the financial industry was the lowest since the 1920s.

4. Efficiency (saving time; faster acting)
5. Availability (flexible/whenever I want)
6. Ease of communication (easier communication)
7. Control (knowing the state of affairs; control)
8. Privacy (misuse personal information; privacy)

In this list the named attribute "faster acting" has been excluded as this attribute is by the respondents translated into "saving time" and therefore not a separate attribute. The same applies for the misuse of personal information (privacy) and more certainty (quality of decision making), which is almost at the end-state level. Although it would be more consistent to replace the concept of attributes for the concept of consequences, this approach has not been followed in the remainder of this research. To avoid confusion the general used term, attribute, is used in this research as well.

Now that the attributes have been elicited, the basic structure of the questionnaire is clear. The channels have to be evaluated on their scores on these attributes and the importance scores of the attributes have to be determined. The phrasing of the questions and the used scales are the next elements of the questionnaires that need discussion.

3.6   Building the questionnaire

Phrasing of the attributes

Some of the mentioned items have been addressed in academic papers that have translated PU and PEOU into an online context. Table 3.8 provides an overview of the phrasing of the attributes. In a number of surveys (Gefen and Straub, 2000; Bhattacherjee, 2001a; Chau and Lai, 2003; Hampton-Sosa and Koufaris, 2005) the original TAM questions about improving performance, increase productivity and enhance effectiveness are used, although it is clear that TAM is meant for explaining the acceptance of an IS in a work situation.[32] In other research (Gefen et al., 2003a; Chen et al., 2004; Sundarraj and Wu, 2005; Wu and Wang, 2005) the number of TAM items is extended and in still other surveys new items are used (McKechnie et al., 2006).

Information quality	I am better informed about.... (Van der Heijden, 2004)
	Provides sufficient amount of explanation (McKechnie et al., 2006)
	Using xxxx enabled me to make a more informed decision in..... (Son et al., 2006)
	The website provides good quality information (Cyr et al., 2007)
	Using xxxx allowed me more analysis..... (Wang and Benbasat, 2005)
Quality of decision making	Using xxxx improves the quality of decision making (Devaraj et al., 2002; Son et al., 2006)
	I can better decide.... than in the past (Van der Heijden, 2004)

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32 In the extension of TAM, Davis and others (Venkatesh et al., 2003) even use the item: "if I use the system, I will increase my chances of getting a raise".

	Using xxxx helps me to get better decisions (Ahn et al., 2004)
	Xxxx improves my performance (Agarwal and Karahanna, 2000; Gefen and Straub, 2000; Kumar and Benbasat, 2006; Kim and Son, 2009)
	Using xxxx saves me money (Ahn et al., 2004)
	Using xxxx improved the quality of my decision making in..... (Son et al., 2006)
	Using xxxx improved the quality of analysis and searching ... (Wang and Benbasat, 2005)
	Using xxxx greatly enhanced the quality of my judgments (Wang and Benbasat, 2005)
Quality of process	Xxxx makes it easier to.... (Gefen and Straub, 2000)
	Xxxx makes it easier to.... (Gefen et al., 2003a)
	I can accomplish my tasks more easily by.... (Chau and Lai, 2003)
	Xxxx would make it easier for me to ...... (Chen et al., 2004; Kumar and Benbasat, 2006)
	I can decide more quickly and more easily... (Van der Heijden, 2004)
	Using xxxx made the task easier.... (Wang and Benbasat, 2005)
	Using xxxx in the next 6 months would make.... easier (Herrero and Rodriguez del Bosque, 2008b)
Efficiency	Xxxx communicates quickly (Karahanna and Straub, 1999)
	Xxxx enables me to.... faster (Gefen and Straub, 2000; Gefen et al., 2003a; Kumar and Benbasat, 2006)
	Using xxxx enables me to accomplish tasks more quickly (Ahn et al., 2004; Wang and Benbasat, 2004; Carter and Belanger, 2005)
	Using xxxx would enable me to.... more quickly than.... (Chen et al., 2004)
	I can decide more quickly and more easily... (Van der Heijden, 2004)
	It would enable me to get... done more quickly (Sundarraj and Wu, 2005)
	Using xxxx would make it easier for me to ... (Wu and Wang, 2005)
	Using xxxx helps me accomplish things more quickly (Chau and Lau, 2003; Hong et al., 2006)
	Using xxxx to.... in the next 6 months would enable me to.... more quickly (Herrero and Rodriguez del Bosque, 2008b)
	Xxx increases my productivity in shopping for ... (Kumar and Benbasat, 2006; Kim and Son)

Ease of communication	Xxxx communicates easily (Karahanna and Straub, 1999)
Control	Using xxxx gives me greater control (Devaraj et al., 2002)
	Provides me with sufficient control (McKechnie et al., 2006)
	Using xxxx gave me greater control over... (Son et al., 2006)
	Using xxxx gave me more control over ... (Wang and Benbasat, 2005)
Privacy	Provides the level of privacy needed (McKechnie et al., 2006)
	Is safer (McKechnie et al., 2006)

Table 3.8 Phrasing of the attributes in TAM related research

Most of the phrasing is comparative: better, easier, more et cetera. This has to do with the origin of TAM: explaining the choice between either using an IS or not using an IS. In multichanneling research this is different: one cannot compare all channels with each other. In this research the phrasing has been based on research in line with the weighted additive and simple additive model. Table 3.9 provides an overview of related research.

RESEARCH	SUBJECT(S)	IMPORTANCE QUESTION	IMPORTANCE SCALE	INSTRUMENTALITY QUESTIONS	SCALE
Lehmann, 1971; Beckwith and Lehmann, 1973	Television show		Very important – very important, 6 point scale	Perception on attribute	High – low 6 point scale
Bass and Talarzyk, 1972	Several products		Forced ranking		Very satisfactory – very unsatisfactory 6 point scale
Bass et al., 1972	Soft drink	Assign a weight indicating the relative importance	1-6 scale	The brand's possession of that attribute	
Bass and Wilkie, 1973			very important – very unimportant six point scale		very satisfactory – very unsatisfactory
Tuck, 1973	Drinking Horlick	From your personal point of view are they good or bad things	Very good – very bad	Following statements seem to you true or false:	extremely likely – extremely unlikely 7 point scale
Bettman, 1974	Toothpaste		Semantic differential scales (wise – foolish, healthy – sick)	Semantic differential scales (possible – impossible, likely – unlikely) Seven point bipolar scale	
Ahtola, 1975	Soft drinks	How likely the brand was to have that amount of attribute	10 poker chips		

Bettman et al. 1975a, 1975c		A quality which you personally feel is …	very important – very unimportant, five point scale	You believe that brand X is …	very high – very low
Lutz, 1975	Detergents	To me, using a detergent that is…	extremely good – extremely bad bipolar 7 point scale		extremely likely – extremely unlikely bipolar 7 point scale
Mazis et al. 1975	Mouthwash, cigarettes, toothpaste, automobiles	Indicate the degree of importance you attach to each of these attributes when buying a particular product	Seven point scale, less importance-more importance, bipolar	Please indicate your judgment as to whether the particular brand gives you the desired satisfaction	very satisfactory – very unsatisfactory, unipolar (1-7)
Ryan and Bonfield, 1980	Financial loan		good – bad, wise - foolish	How likely do you feel it is…	likely – unlikely 7 point scale bipolar

Table 3.9 Phrasing of the attributes in research based on the weighted and simple additive model

Scales of the constructs

The scales are in line with the weighted additive model, using the scale very important – very unimportant for stating the importance of the attribute (cf. for instance Batra et al., 2001) and using the scale to which degree the respondent believes the channel possesses the characteristic. This differs slightly from the wording of Fishbein and Ajzen (2010; Ajzen and Fishbein, 2008), who use a good-bad scale and use the phrase likely – unlikely. The good-bad scale is not usable given the fact that the attributes have been selected on their importance for the respondents during the laddering interviews. As Fishbein (1976) has noted: "if you know the content of a person's belief, then you should use a unipolar measure" (p. 493).

There is some debate whether disconfirmation should be measured by subtracting expectation from perceived performance or whether it should be measured directly as an independent construct (McKinney et al., 2002; Klein et al., 2009), which resembles the discussion about SERVQUAL (e.g. Cronin and Taylor, 1992, 1994; Dabholkar et al., 2000). In research using EDT with regard to an online channel (Bhattacherjee, 2001a; McKinney et al., 2002; Khalifa and Liu, 2003; Bhattacherjee and Premkumar, 2004; Hong et al., 2006) disconfirmation is usually measured by asking whether the experience was better or worse than expected. This is in line with the origins of the model and more recent publications by the author (Oliver, 1993; Oliver et al., 1997; Oliver, 2010) and the results "paralleled and, in some cases, exceeded those using difference scores" (Oliver, 1980; p. 463). Satisfaction is measured by using the attributes and by asking for the used channel per attribute whether this was better or worse than expected, conform numerous surveys on this topic (e.g. Oliver, 1980; Churchill and Surprenant, 1982; Oliver, 1993).

All questions are asked on a 7-point Likert scale. Likert-type scales are said to be ubiquitous, especially in attitude research (e.g. Jacoby and Matell, 1971; Sing et al., 1990; Dittrich et al., 2007) and have been used in information systems research for over 20 years (Chin et al., 2008) and in nearly all studies on TAM Likert scales are used (Chin et al., 2008; p. 688). The 5 and 7 point scales have become more or less the standard (Dawes, 2008); seven point scales "are more versatile descriptively" (Oliver, 2010; p. 48) and have been used in numerous research (e.g. Venkatesh and Goyal, 2010).

Attitude is measured on basis of the preference of the channels; an approach not uncommon in marketing research (e.g. Lehmann, 1971; Bass et al., 1972; Beckwith and Lehmann, 1973; Ajzen,

2008) and in line with the multi attribute attitude model, that implies that the channel with the highest utility will have the highest preference (cf. Horsky and Rao, 1984; Horsky and Nelson, 2006). This preference can be equated with the more common definition of attitude in terms of favorable/unfavorable. It can be argued that in choosing between channels the absolute favorable/unfavorable score is not relevant; it is the ranking of the channels on this score that matters.

3.7   The pilot research

Research model

Based on the analysis of the constructs PU and PEOU and the used constructs in the literature, the model has been adjusted. PU and PEOU are no longer the important constructs on which the preferences are based; they are replaced by the 8 attributes that have been found in the laddering interviews. The model that has to be tested in the pilot research is as follows[33]:
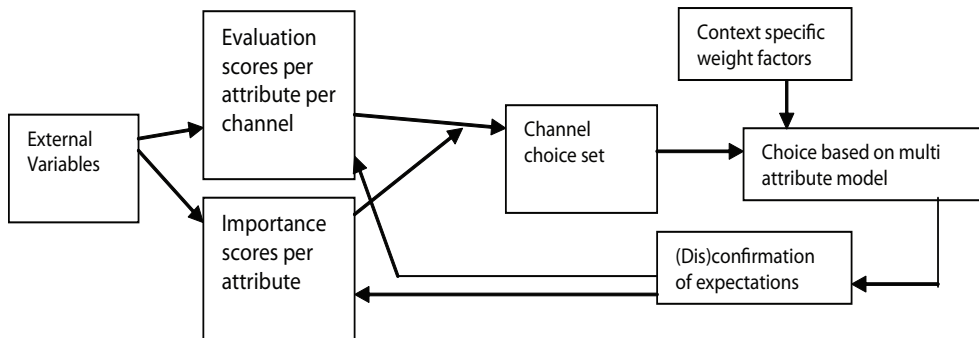
Figure 3.8 The multichannel dynamic model

The main topic of this thesis is the purchase of services. As has been noted the concept of services is too broad and therefore in the laddering interviews financial services have been used to generate the relevant attributes. Given the fact that there are several financial services that differ from each other on a number of criteria (cf. Black et al., 2002; Durkin et al., 2008; Cortinas et al., 2010), it is necessary that the field research should focus on one specific service. As a subject for this research the buying of travel insurance has been chosen. The choice for this specific service is based on several considerations:

- Most consumers have experience with this rather simple service (see Durkin et al., 2008 for an overview of the complexity of financial services) or have at least an idea what it involves (contrary to more difficult services like mortgages or life insurances). This will improve the quality of the answers.
- Most consumers have recent experience with this service, which means that they are able to evaluate the channels based on recent information, which decreases the pressure on the memory of the respondent.
- The service is easy to incorporate in an experiment.
- Few people will have experience. It can be expected that preference changes are more likely to occur when respondents encounter new experiences (cf. Hoeffler and Ariely, 1999). A similar

33 The role of the importance scores is not obvious yet and one of the issues in the pilot research; therefore all the possible relations are drawn.

argument is given by Bhattarjee and Premkumar (2004; p. 234): "The effects of disconfirmation and satisfaction on consequent belief attitude may continue to recur over time as users gain additional IT usage experience and thereby revise their prior cognitions in an iterative manner. However, such changes are believed to occur more during the initial phases of IT usage as the user moves from the pre-usage to usage phase, and wear out with time as users' cognitions stabilize and become more realistic based on repeated interactions with the target system".

The questionnaire follows the usual sequence in this kind of research: importance of the attributes, channel preference, evaluation of channels per attribute. It is important to ask first about the importance levels and after that about the scores of the channels as they should be independent (Ajzen, 2001). After these steps respondents are asked to use their mobile phone to simulate the buying of travel insurance via the mobile Internet. On this site respondents pretend they are buying travel insurance with their mobile phone. Illustration 3.1 shows some screenshots. The intention was that only respondents who have a subscription to this kind of service could participate to avoid costs for the respondents. As it turned out that not many respondents have this subscription, respondents could use a provided mobile telephone to conduct the experiment.
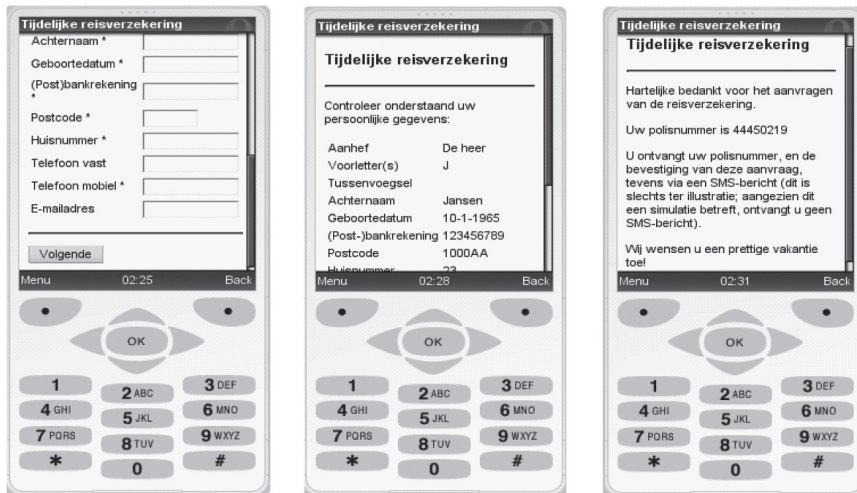
Illustration 3.1 Screenshots: the purchase of travel insurance

After conducting this simulation they are referred back to the questionnaire. The second part evaluates the satisfaction with the used channel, based on scoring the previous mentioned attributes. Next the channel preference is asked, which can be seen as one of the key questions, because this answers the question whether the channel choice set changes because of the (unexpected) use of a channel. Followed by another crucial set of questions: the importance of the attributes to provide information about the dynamic character of multichannel behavior.

Expert opinions and test interviews

Two experts from a large Dutch insurance company have evaluated the questionnaire. One expert has many years of experience in marketing research within the insurance industry; the second expert has many years of experience in channel distribution strategy within the insurance industry. The comments from the marketing research expert on the wording of the questionnaire have been used to slightly adjust the questionnaire. The wording of questions relating to the attributes and the

review of the channel has been made more personal (using I instead of you) and questions referring to the review of the channels have been adjusted. The comments from the expert on distribution strategy refer to the distinction between direct and indirect channels and the special place of the website. The five used channels in this survey could be differentiated to these direct and indirect distribution channels. Although the distinction between direct and indirect channels is important from a strategy point of view, it is of little importance in this survey as the focus is on the acceptance of new technology. In other words: the appreciation of the telephone channel is independent of the question whether it is used to contact an insurance company or an intermediary. A practical issue is how to let respondents evaluate all these possibilities.

The questionnaire has been tested with three respondents; these three respondents also conducted the experiment with the mobile Internet. Although the planning was to conduct five test interviews, after three interviews it has been concluded to start with the survey as the interviews showed that no adjustments were necessary (see Terstegen, 2009, for more details about the experts).

Sample selection and sample size[34]

The sample is based on convenience sampling, which is seen as suitable for exploratory research purposes (Wilson, 2006) and "its target is the practicality of proposed operations, not the creation of empirical truth" (Locke et al., 2007; p. 78). Respondents have been invited by e-mail, topics in Internet panel discussions (www.wetenschapsforum.nl; www.wereldwijzer.nl; www.telecomvergelijker.nl) and directly by the student responsible for this part of the research. The questionnaire has been published on www.thesistools.com. As it turned out that many respondents do not have unlimited access to Internet through their mobile telephone, a mobile telephone has been made available for a number of respondents. These respondents were approached by the student and conducted the research in his presence. Of the total of 50 respondents who have conducted this experiment, about half of the respondents have used the mobile telephone provided by the student.

The sample size is larger than is usually recommended in pre testing. Wilson (2003) mentions a pilot test sample of 10 to 40 respondents. The relatively large sample size used in this research is caused by the third goal of the pilot research (besides testing the questionnaire and the experiment): to test whether the assumptions on which the model is based are valid. The testing of the assumptions needs a sample size that allows for statistical testing. In total 101 respondents have participated in this research; 60 men and 41 women. The average age is 33 years. Of the 101 respondents, 50 respondents have conducted the mobile Internet experiment.

Results[35]

As has been mentioned this pilot study serves three purposes in this research. First of all the questionnaire has to be tested. A second purpose has been to evaluate the experiment. A third goal of the pilot research is to test whether the assumptions on which the model is based are valid. These assumptions have been 'translated' into research topics. The results of these three goals of the pilot survey will be discussed in the next paragraphs.

Questionnaire and experiment
The questionnaire has been filled in 183 times. This has resulted in 101 correct and complete

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34 The fieldwork has been conducted from May – July 2009 by Sander Terstegen. He conducted the research for his master thesis Business Information Systems, University of Amsterdam.

35 The analysis of the results has been conducted on the data-set that Sander Terstegen has provided; for his own analysis see Terstegen, 2009. The results presented in these paragraphs are based on 46 of the 50 respondents who have conducted the experiment.

questionnaires (55%). This shows that the questionnaire has caused the respondents some problems, therewith indicating that an online data collection approach might have some severe shortcomings. One of the main reasons of the incomplete questionnaires is the length of the interview, especially when respondents conduct the experiment. Evaluative interviews have indicated that respondents do not have a problem with the wording of the questions or the questions itself, but with the length of the questionnaire. A second issue is conducting the experiment, which has been difficult for a number of respondents. These findings will be used in the large scale survey when discussing an interview method. Next the assumptions (see 3.2 on which the model is based will be discussed.

Assumptions

- *Assumption 1: Do consumers have a channel choice set, which means consumers are able to rank the channels according to their preference based on an evaluation of the channels?*

First the last part of this research topic will be addressed. Are respondents able to evaluate the channels on the attributes and is that evaluation in accordance with general expectations? If the answer is affirmative, their review can be compared to their ranking to find out whether this choice is consistent. Table 3.10 provides an overview of the result of the importance scores and the review of the channels. When purchasing travel insurance, the most important attributes of a channel are: easy and making right choice.

Attributes of a channel ranking from most important to least important (n= 101)	Mean (1 very unimportant – 7 very important)	Mean score face-to-face channel	Mean score telephone channel	Mean score Internet channel	Mean score mobile channel	Mean score written channel
Easy	5.90	5.29	5.19	6.08	4.82	3.67
When I want	5.85	3.91	4.64	6.50	5.75	5.07
Getting good information	5.82	6.02	5.00	5.51	4.18	4.07
Having control	5.79	5.42	4.65	5.54	4.64	4.66
Making right choice	5.89	5.70	4.77	5.85	4.68	4.73
Spending little time as possible	5.62	4.11	5.13	5.92	4.94	3.47
Easy communicating	5.68	5.89	5.01	4.41	3.39	3.23
Safety personal information	5.77	5.64	4.50	4.78	4.10	4.76

Table 3.10 Importance scores of the attributes

The review of the channels can be summarized as follows:

- The face-to-face channel scores relatively high on the attributes getting good information, making right choice, easy communicating and safety personal information; relatively low on the attributes when I want and spending little time as possible.
- The telephone channel scores less pronounced with the highest score on the attribute easy and the lowest score on safety personal information.
- The Internet scores high on the most important attributes and low on the least important attributes.
- The mobile Internet channel scores relatively low compared to the other channels; only on

when I want and spending as little time as possible does it score better than the face-to-face channel.
• The written communication channel scores relatively high on when I want and safety personal information.

The results show that respondents are able to evaluate the channels on the attributes. From these scores the results in table 3.11 come not unexpected. Respondents have given their most preferred channel the ranking of 1, the second preferred channel the ranking 2 and so on. This means that the lower the mean of the ranking, the more the channel is preferred. The most preferred channel is the Internet, followed by telephone and face-to-face. Mobile Internet is on the fourth place.

Channel (n=101)	mean of the ranking
Face-to-face	3.06
Telephone	2.66
Internet	1.83
Mobile Internet	3.55
Written communication	3.89

Table 3.11 Channel preferences (ranks)

The results of table 3.11 are in line with what one expects based on the results presented in table 3.10. Respondents are able to evaluate the channels on their attributes in a way that is in accordance with common sense (e.g. the Internet channel scores high on the attribute when I want). This leads to a ranking that is in accordance to their review of the channels, which indicates that they do have a channel choice set with different preference scores.

• *Assumption 2: To what extent does the compensatory choice model predict the decision making process in channel choice? Does the weighted additive model score higher than the additive model?*

The weighted additive model is presented in Table 3.12a. The predicted rank is calculated based on summarization of the importance score X actual score per attribute per channel and is compared with the actual preference on an individual level (cf. Churchill, 1972).

Importance X Beliefs (n=101)		ACTUAL RANK				
		1	2	3	4	5
PREDICTED RANK	1	.65	.23	.13	.10	.13
	2	.15	.29	.27	.14	.14
	3	.06	.26	.32	.29	.06
	4	.07	.13	.22	.34	.14
	5	.07	.10	.07	.14	.53

Table 3.12a Predicted versus actual rank using the weighted additive model

The first choice is predicted correct in 65% of the cases; the fifth choice is predicted correct in 53% of the cases. The table shows that the model lacks accuracy to predict the 2nd, 3rd and 4th ranks. In total 43% of the cases are predicted correct. In Table 3.12b the results are presented if only the beliefs are used, which means that the simple additive model is used. The first choice is now predicted correct in 66 % of the cases; in total 42% of the cases are predicted correct.

Beliefs only (n=101)		ACTUAL RANK				
		1	2	3	4	5
PREDICTED RANK	1	.66	.24	.14	.11	.15
	2	.14	.30	.28	.17	.14
	3	.06	.25	.31	.27	.06
	4	.06	.13	.21	.31	.15
	5	.08	.09	.07	.15	.50

Table 3.12b Predicted versus actual rank using the simple additive model

The results from those two tables show that there is hardly any difference between the two models. Although this result has been found in other research (e.g. Churchill, 1972; Nakanishi and Bettman, 1974) it might in this case be explained by the already mentioned high importance score of the attributes, which is supposed to be related to the selection of these attributes by qualitative interviews, in which only the most important are included (cf. Abalo et al., 2007). This means the attributes differ hardly on their importance score (highest 5.90 – lowest 5.62) and therefore are of little influence on the preferences. This would imply that if one chooses for the method used in this research and therewith selecting only highly important attributes, the importance scores are of little relevance.

Do the results provide sufficient evidence for the relevance of the weighted additive model or the simple additive model to describe the channel choice process? The results for predicting preference number 1 and number 5 are relatively good. This is in line with other research (Bass, 1972)[36] in which the correct predicting is also highest for the most and least preferred.

- *Assumption 3: To what extent does the consumer evaluate the importance of the attributes after the use of a channel?*

To answer assumption 3 the null-hypothesis, that says that there are no significant differences between the means of the importance before and after trying the mobile Internet, is tested. Table 3.13 lists the importance scores (means) for the respondents who have used the mobile channel during the research (n=50). The second column gives the importance scores before the trial; the third column gives the importance scores after using the mobile channel. Column 4 gives the significance, using the T-test, and column 5 gives the significance, using the Wilcoxon's signed rank

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36 Although the author writes about Fishbein's model in the article, the model has been adjusted by adapting the evaluative aspect into relative importance, therewith using the weighted additive model.

test, to test whether the differences are significant (e.g. Argyrous, 2000; Field, 2000). [37].

The results show that the null-hypothesis has to be rejected, regardless of which statistical method is used. The differences are significant at the 95% level for the attributes easy, when I want and spending as little time as possible. Remarkable is the fact that the scores of all means (except safety personal information) increase after using the mobile Internet. This might express that consumers realize the importance of attributes more if they have a recent experience with purchasing the service.

Attributes (n=46)	Mean importance before use of mobile channel	Mean importance after use of mobile channel	Significance (2-tailed)	Wilcoxon signed rank test, asymp. sig. (2-tailed)
Easy	5.63	6.09	0.045	0.049
When I want	5.65	6.28	0.003	0.004
Getting good information	5.65	6.00	0.034	0.045
Having control	5.57	5.85	0.140	0.192
Making right choice	5.91	6.07	0.405	0.579
Spending little time as possible	5.48	6.04	0.026	0.026
Easy communicating	5.57	5.70	0.542	0.624
Safety personal information	5.76	5.67	0.543	0.625

Table 3.13 Means importance of attributes before and after use of mobile Internet

- *Assumption 4: Does the actual use of a channel affect the channel choice set by influencing the preferences (ranks) of the channels?*

The null hypothesis is that there is no significant difference between the ranks before and after using the mobile Internet. Table 3.14 provides the answer.

Channel (n=46)	Rank means before using the mobile Internet	Rank means after using the mobile Internet	Significance (2-tailed)	Wilcoxon signed rank test, asymp. sig. (2-tailed)
Face-to-face	3.11	3.13	0.893	0.701

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37 It has been argued that the used scale is not on an interval level but on an ordinal level, which means that using means and comparing them is useless. The idea behind this statement is the fact that one only has a ranking, but there is no real unit of measurement like for instance measuring age in years (Argyrous, 2000). Therefore the Wilcoxon signed-ranks z-test has to be used. In the last column of Table 3.13 the results of this test are presented. The results remain the same: significant differences for the same three attributes. This topic will be discussed at length in chapter 4.

Telephone	2.46	2.78	0.046	0.051
Internet	1.98	2.04	0.667	1.000
Mobile Internet	3.50	3.09	0.020	0.018
Written communication	3.87	3.96	0.561	0.382

Table 3.14 Ranking of the channels before and after use of mobile Internet

Once again the null-hypothesis has to be rejected: the difference of the preference ranking of mobile Internet is significant, whether measured with the t-test or Wilcoxon's signed rank test. The positive change in the ranking of the mobile Internet is in line with their satisfaction about using this channel as can be seen in Table 3.15. Respondents can express their satisfaction per attribute with a score from 1 (much worse than expected) to 7 (much better than expected). A neutral score therefore would be a mean of 4. As the table shows the only attribute that does not exceed the expectations is the attribute getting good information. All other attributes score higher, with a relatively very high score for the attribute when I want. This indicates that there is indeed a relation between the level of satisfaction and the ranking of the mobile Internet.

Attributes (n=46)	Mean score satisfaction (much worse than expected 1 – much better than expected 7)
Easy	5.16
When I want	6.03
Getting good information	4.00
Having control	4.72
Making right choice	4.38
Spending little time as possible	5.06
Easy communicating	4.72
Safety personal information	4.50

Table 3.15 Expectancy confirmation scores of the mobile Internet channel

The results of the pilot research are in general supportive for the assumptions of the model. Two important issues remain. First the lack of convincing scores for the decision making strategy raises some doubts about the chosen strategy in the model. To provide more insight in this decision making process, a qualitative research has been conducted. The second issue is whether the selected attributes reflect the most important attributes for consumers. A quantitative research in a different service context has been conducted to answer this question. The results of these two surveys will be presented in the next two paragraphs.

3.8   Additional research

Qualitative research in finding channel choice strategies[38]

The purpose of this part of the research is to find out what strategies are used for decision making with regard to the choice of a channel for purchasing travel insurance. To gather insight in the way consumers decide several methodologies have been used, such as verbal protocols and eye movements (Einhorn and Hogarth, 1981; Russo and Leclerc, 1994). Using verbal protocols is recommended by Denstadli and Lines (2007) to assess the realism of the assumption of the weighted additive strategy in decision making. Thinking aloud/verbal protocols can be defined as qualitative research, which is research that is "undertaken using an unstructured research approach with a small number of carefully selected individuals to produce non-quantifiable insights into behavior, motivations and attitudes" (Wilson, 2006; p. 105). The use of verbal reports is not without debate (Payne, 1994)[39] but it has become a respected method since Ericsson and Simon (1993) published the first edition of their monograph in 1984 (Lucas and Ball, 2005). Protocol analysis has been used in a number of consumer research studies (Bettman and Park, 1980; Bettman et al., 1991) and has also been used in pretesting questionnaires (Bolton 1991, 1993). Table 3.16 provides examples regarding consumer decision making.

SUBJECT	RESEARCH DESIGN	CODING METHOD	SAMPLE SIZE	PUBLICATION
Grocery product shopping	Think aloud: shopping	Modeling the choices	5 housewives	Bettman, 1970
Knowledge of products: automobiles, butter and margarine, dinner entrees, headache remedies	Think aloud: imagine a visiting friend from a foreign country needs to know to make an informed purchase of specified products	Two independent judges, coding based on a priori ideas (theory)	12 staff members of a university	Russo and Johnson, 1980
Choice of a micro wave oven	Think aloud: first the brands that would be acceptable, then choose the brand most preferred	Two judges (the authors) based on theory	68 individuals from a small Midwestern USA town	Bettman and Park, 1980
Advertising effects on preferences for a college	Think aloud: rank order 16 colleges	One judge, coding based on categories that imply a theory (not explicit mentioned)	144 high school students	Wright and Rip, 1980

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38 The fieldwork has been conducted between October 2009 and January 2010 by Rik Smit, Pieter Eissens and Said El Mouhidi; at the time of the research students Bachelor of ICT at the Hogeschool van Amsterdam. The students conducted the research as part of their participation in an Excellence Programme of the Hogeschool van Amsterdam and their efforts were rewarded with study credits.

39 Ericsson and Simon (1993) mention five important issues. The validity of verbal protocols is debated because of two possible effects: reactivity and nonveridicality. Reactivity occurs if the thinking aloud method changes the primary process, that is the task. Nonveridicality means that thoughts are omitted or thoughts that did not occur are nevertheless reported (Russo et al., 1989; Harte and Koele, 2001).

Choice of a fictitious toothpaste brand	Think aloud	Two authors, using Bettman and Park (1979), 1980) coding scheme	108 respondents of which 80 % undergraduate students	Biehal and Chakravarti, 1982b
Choice of calculator	Think aloud: two groups, one group thinking aloud	Two experimenters, using Bettman and Park coding scheme	62 respondents of which 82 % undergraduate students	Biehal and Chakravarti, 1989
Online university library catalogue	Think aloud: performing tasks (e.g. number of publications on the topic Shakespeare)	Usability problem detection and classification	40 students	Van den Haak et al., 2003

Table 3.16 Verbal protocol analysis in consumer research

There are numerous ways in which verbal reports can be obtained. They are all based on a simple model of the human cognitive system (Van Someren et al., 1993; p. 20):
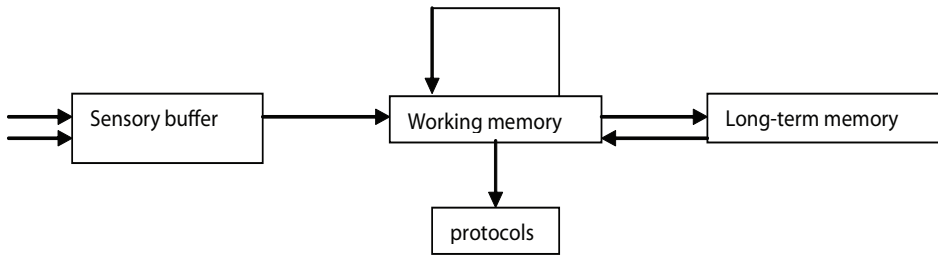
Figure 3.9 The model of the human cognitive system

The five processes of the model are (Van Someren et al., 1993):

- perception: information flows from the sensory buffer into the working memory;
- retrieval: information is retrieved from long-term memory into working memory;
- constructing: new information is constructed from other information in the working memory;
- storage: stores information from working memory into long-term memory;
- verbalization: information that is active in working memory is put into words, which leads to the spoken protocol.

In using this last mentioned method the respondent has to think out loud as if performing the task of interest (Van den Haak et al., 2003), in this case choosing a channel. Not only what decisions are made, but also how decisions are made is important. Combining an analysis of choices with the results of process-tracing techniques as verbal protocols is an often used method among decision researchers (Payne and Bettman, 2004; p. 115). There are two forms:

- concurrent verbal reports; talk/think aloud when conducting a task;
- retrospective report; talk/think aloud after the task is finished.

Both methods have advantages and disadvantages (e.g. Muylle et al., 2004). Kuusela and Paul (2000) compared the effectiveness of concurrent and retrospective data for revealing the human decision making process. In general, the concurrent protocol analysis method outperformed the retrospective method. A difficulty is coding the data, because that assumes some kind of theory. Even in the process of gathering the data some theory is needed to know what data to gather. It is advised (Ericsson and Simon, 1993) to minimize the theoretical commitments as much as possible. The constructive view of decision making implies that consumers make up the rules during the decision making, which makes coding even more difficult (Bettman and Park, 1980). Many studies have developed their own protocol-coding scheme (Biehal and Chakravarti, 1982a).

In the pilot interviews the concurrent think aloud method has been used. In total 13 interviews have been conducted with respondents ranging from 18 to 70 years in November 2009. The sample consisted of a convenience sample. Respondents are asked to pretend that they are going on holidays next week and need to buy travel insurance. They are asked to think aloud while explaining how they will do this, choosing the channel and the provider. In the interviews it has become clear that the think aloud method is not sufficient to gather the necessary information. Respondents are able to explain their decision making strategy, but do not elaborate enough on this strategy to make a classification possible. Therefore it has been decided to expand the method.

The used method is a combination of thinking aloud on the one hand and questions and prompting on the other hand. Combining methods is often possible (Van Someren, 1993) and is used to maximize the results. Respondents are asked to pretend they need travel insurance on a short notice, because they are travelling unexpectedly. The first question is which channel they will use and they have to explain why they will choose this channel. Contrary to the pilot interviews, the interviewer helps the respondent with prompting questions like "are there any other considerations?", "are there any others things that play a part?", "how do you choose between the channels?". Based on the answers, the interviewer codes the respondent into one of the strategies. After coding the respondent, the interviewer explains this to the respondent:

> "People decide in different ways. A classification has been made. Based on what you have told me about the use of the channel and the reasons for using this channel, I classify you... The description of this strategy is ... Do you agree with my classification?".

The classification is based on the 11 mentioned strategies (see 2.7):

1. Lexicographic strategy: alternatives are compared initially on the most important attribute; the alternative with the highest perceived score on that attribute is chosen. If two alternatives are perceived as equally good, the alternatives are compared on the second most important attribute. This strategy might be chosen in a situation in which there is a large difference between the weights; it will give fairly high levels of accuracy and will limit the necessary effort.

2. Elimination by aspects strategy (Tversky): alternatives are (like lexicographic strategy) first evaluated on the most important attribute, but in this strategy a cutoff is used (alternatives must meet the cutoffs). If two alternatives meet the cutoff on the most important attribute, they are evaluated on the second most important attribute (cf. Slovic et al., 1977; Gilbride and Allenby, 2006).

3. Disjunctive (or maximax) strategy: alternatives are compared on their best attribute and the alternative with the highest score on its best attribute is chosen.

4. The minimax strategy, which suggest alternatives should be judged on their weakest component; the alternative with the strongest weakest component being chosen (Shugan, 1980).

5. Conjunctive strategy: each alternative is compared against a set of cutoffs for all

important attributes; so the consumer inspects all alternatives on the first attribute, then the alternatives that pass the cutoff level on the second attribute and so on. Only the alternative that meets the cutoffs for all the attributes is chosen (Grether and Wilde, 1984). An alternative strategy is cutoff by brand, where the consumers pick a brand and evaluate the brand on all the attributes. If it does not pass the cutoff on any alternative, the next brand is chosen to evaluate (Sethuraman et al., 1994).

6. Satisficing (Simon, 1955) implies considering one alternative at a time. Each attribute of the alternative is compared to the cutoff value; if it is under the value the alternative is rejected and the next is evaluated. If it satisfies all attributes, it is chosen, without considering the remaining alternatives (Payne et al., 1988; Edwards and Fasolo, 2001).

7. Majority of confirming dimensions: pairs of alternatives are compared on each attribute; the alternative with the highest scores is then compared with the next alternative and so on (Bettman et al., 1991).

8. Frequency of good and bad features: consumers evaluate good and bad features compared to a cutoff level and simply count them. Might be on good or bad or both features (Bettman et al., 1991).

9. Simple additive: the alternative with the largest number of positive attributes is chosen as the consumer simply counts the number of times an alternative is judged favorably on an attribute.

10. Weighted additive: the consumer judges the alternatives on the attributes and weights these judgments by the importance of the attribute. The relative importance is multiplied by the value and the products are summed; the alternative with the highest overall summed evaluation is selected, which makes it a maximizing strategy (Payne and Bettman, 2004).

11. Equal weight: the values for each alternative are simply added and not weighted by importance (Bettman et al., 1991).

In total 40 interviews have been conducted in the period of December 2009 - February 2010. The sample is a convenience sample with the following characteristics:

Age range	25 - 80
Average age	43 years
Percentage women/men	40/60

Two interviewers who are familiar with the decision making strategy literature and the most important strategies have conducted the interviews. The results of the coding are:

Lexicographic	8
Elimination by aspects (EBA)	11
Satisficing	4
Majority of confirming dimensions	1
(Weighted) additive	16

Coding the answers during the interview has the advantage of receiving feedback of the respondent and the possibility of confirming the opinion of the interviewer. A disadvantage is the pressure it puts on the reviewing skills of the interviewer, who has to form his /her opinion directly after the interview. In all interviews the respondents has agreed with the interviewer. This remarkable

consensus might be explained by the skills of the interviewer. Another explanation might be the difficulties respondents have in structuring their own decision making process. By accepting the strategy that is suggested by the interviewer, the respondents avoid any cognitive effort (cf. Holbrook et al., 2003; see also Krosnick's 1991, 1999, theory of survey satisficing). It might also be socially acceptable behavior. The line of reasoning being as follows. If the interviewer mentions a strategy, I accept that, even if I did not use that strategy, because otherwise the interviewer may think I am not a competent decision maker. As it has been noted that consumers may overstate the choice making behavior, "because this may appear desirable as well as expected behavior" (Olshavsky and Granbois, 1979; p. 94).

The coding of the strategies is relatively easy except for the (Weighted) additive. This is caused by the fact that respondents don't describe their used strategy as it is mentioned in the textbooks on decision making. Respondents do mention that they compare several channels on aspects they find important, but the weighting process is less obvious. In the interviews a number of respondents have stated that they compare the channels on several attributes and that the attributes are of different importance, without actually mentioning the weighted additive process. This is in line with previous research (Payne et al., 1993).

Based on these 40 interviews it can be concluded that the multi attribute attitude model is only used by a minority of the respondents. However, the lexicographic strategy can be seen as a specific form of the weighted additive in which the importance factor of the used attribute is very high and the importance factors of the other attributes are very low, which means the scores on those attributes do not influence the decision. EBA and satisficing are completely different strategies. The high score for (weighted) additive and EBA are in line with the statement that these strategies are the most commonly studied strategies (Wang and Benbasat, 2009; p. 296).

In the qualitative research the weighted additive has been most mentioned, although it applies only to a minority of the respondents. Based on this research the choice between the channels is seen as a compensatory method. Therefore this method will be used in the model.

The relevance of the attributes: eGovernment[40]

Although the importance scores in the pilot research are high, it is obvious that the model leans heavily on the right selection of the attributes. To validate the outcomes of the laddering research and the pilot research an extra survey has been conducted regarding the use of governmental services. EGovernment has become an important research domain (Wimmer et al., 2008; see Rose and Stanford, 2007 for an overview) for a number of reasons. Although eGovernment involves a large number of specific issues, like participation (Rose, 2007), public service (Van Deursen et al., 2007), democracy (Torres et al., 2006), there is a stream of research on eGovernment issues that resembles research on eCommerce. These studies include for instance explanation of use (Van Deursen et al., 2006; Wang and Liao, 2008a), trust and risk (Warkentin et al., 2002; Bélanger and Carter, 2008); mGovernment (Misuaraca, 2009), satisfaction (Cohen, 2006), relationship management (Kannabiran et al., 2004), stages of e-development (Layne and Lee, 2001) and channel choice and multichannel behavior (Pieterson and Van Dijk, 2006, 2007; Wimmer, 2002; Ebbers et al., 2008; Pieterson and Ebbers, 2008; Lee and Rao, 2009; Pieterson, 2009; Shareef et al., 2011; Teerling and Pieterson, 2011; Van de Wijngaert et al., 2011). Besides these studies there is another reasoning for choosing eGovernment: for most citizens the use of governmental services is goal oriented and therefore resembles the

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40 The research discussed in this paragraph has been conducted by Marcel Veldhuizen; at the time of the research student Master Business Information Systems at the University of Amsterdam. He conducted this research for his master thesis. The analysis of the results has been conducted on the data-set that Marcel Veldhuizen has provided; for his own analysis see Veldhuizen, 2010.

use of financial services. Therefore it is assumed that the results regarding importance scores and scores of the channels should be in line with the found results in the pilot research. The sample is a convenience sample of 103 respondents; the research has been conducted online in the period May – June 2010.

	mean		mean score face-to-face		mean score telephone		mean score Internet	
	travel insurance	governmental services	travel insurance	governmental services	travel insurance	governmental services	travel insurance	governmental services
Easy	5.90	5.93	5.29	5.22	5.19	4.91	6.08	5.12
When I want	5.85	5.69	3.91	3.83	4.64	4.42	6.50	6.21
Getting good information	5.82	5.94	6.02	5.70	5.00	5.18	5.51	5.51
Having control	5.79	5.43	5.42	4.81	4.65	4.59	5.54	5.13
Making right choice	5.89	5.82	5.70	5.51	4.77	5.12	5.85	5.35
Spending little time as possible	5.62	5.92	4.11	4.22	5.13	4.65	5.92	5.67
Easy communicating	5.68	5.75	5.89	5.42	5.01	5.09	4.41	4.68
Safety personal information	5.77	5.99	5.64	5.53	4.50	4.91	4.78	5.08

Table 3.17 Importance scores and channel evaluation scores in financial and governmental services research

Table 3.17 shows the results (compared with the results from the travel insurance pilot research). In the eGovernment research the number of channels has been limited to three: face-to-face, telephone and Internet. Although there are some differences between the importance scores (for instance safety personal information has the highest score in the eGovernment research; easy has the highest score in the travel insurance research), the results are comparable. All attributes score high averages (above 5.4). The evaluation of the channels shows similar results as the travel insurance research. There are some interesting differences, for instance between the evaluation of the Internet channel for both services, but these are beyond the scope of the research questions addressed in this dissertation.

3.9   Research hypotheses

The pilot research leads to some preliminary findings. Within all the limitations of the pilot research (convenience sample, restriction to travel insurance, experiment with mobile Internet) the dynamics of the multichannel model have been confirmed. Significant changes in the importance scores of the attributes and in the ranking of the mobile Internet provide the evidence. The second finding is that the selected attributes, based on the laddering research, have high importance scores and seem to represent important aspects for consumers. This has been confirmed in a related survey regarding the use of channels with respect to governmental services.

A number of issues remains. First of all it has become obvious that the TAM constructs PU and PEOU are not suitable for multichannel research regarding the use of channels for financial services. This means that an important motivation for using TAM, using the same attributes for every survey, is

not valid. Secondly it has not become clear which rational choice model predicts the ranking best. There is hardly any difference between the weighted additive and simple additive model. This raises doubt about the assumption that the use of a channel will result in a different ranking because of the change in importance scores. The weighted additive and the simple additive model score comparable results. The correct predicted percentage of preferences for both models is not that high that it is obvious that one of the models is used by (all of) the respondents. The qualitative research shows that these strategies are the most often used, but other strategies might be important as well. Based on these results the questionnaire has been adjusted to make it possible to evaluate more decision making strategies afterwards. In the used pilot questionnaire the respondents give importance scores from 1 to 7. In many cases they give a number of attributes the same (usually high) importance scores, which makes it impossible to calculate whether other decision making strategies are used. Therefore a question is added in which the respondent has to rank the attributes from most to least important, therewith creating the possibility to conclude afterwards whether lexicographic or EBA strategies have been used. This also counterbalances the satisficing perspective of respondents who might act as follows:

> "When confronted with a battery of ratings asking that a series of objects be evaluated on a single response scale, respondents who are inclined to implement strong satisficing can simply select a reasonable point on the scale and place all the objects on that point" (Krosnick, 1999; p. 556).

The model can be 'translated' into a number of hypotheses that have to be tested; these hypothesized links are the heart of the model (cf. Hoyle et al, 2002). Before testing the hypotheses it has to be confirmed whether a number of basic conditions are met. These conditions are the basic assumptions that refer to the model. If these conditions are not met, the model has no relevance at all and therefore there is no use in testing the model.
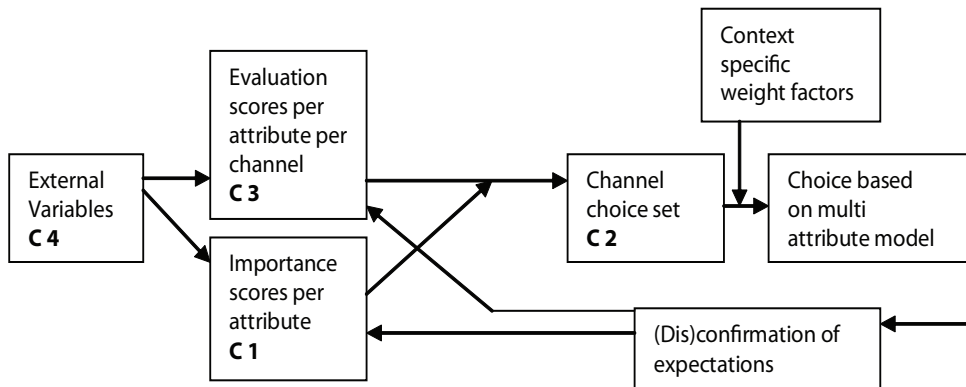
Figure 3.10 The multichannel dynamic model: conditions

- *C(ondition) 1: The importance scores of the attributes are high.*

Based on the literature review, the qualitative laddering research and the pilot interviews it is assumed that all eight attributes are important in choosing a channel for purchasing travel insurance. This means that the importance scores are well above the average (4) and there are no large differences between the attributes.

- *C(ondition) 2: Respondents have a channel choice set that contains the relevant channels with a different intention to use.*

Respondents have a different preference for the channels; they prefer some channels to others. This leads to a ranking of the channels.

- *C(ondition) 3: Respondents are able to evaluate the channels on their attributes and give meaningful scores to the channels.*

The evaluation of the channels has to be in line with common sense. This means that channels score high on attributes on which they have an advantage compared to the other channels. For instance: on the attribute when I want the Internet should score relatively high and the face-to-face channel should score relatively low.

- *C(ondition) 4: External variables (e.g. socio-demographic characteristics, experience of the consumer) are of influence on the importance scores and evaluation of the channels.*

Differences in importance scores and differences in the evaluation of the channels are caused in the model by external variables.

If these basic conditions are met, the model can be tested. The logic of the model has been translated into a number of hypotheses.
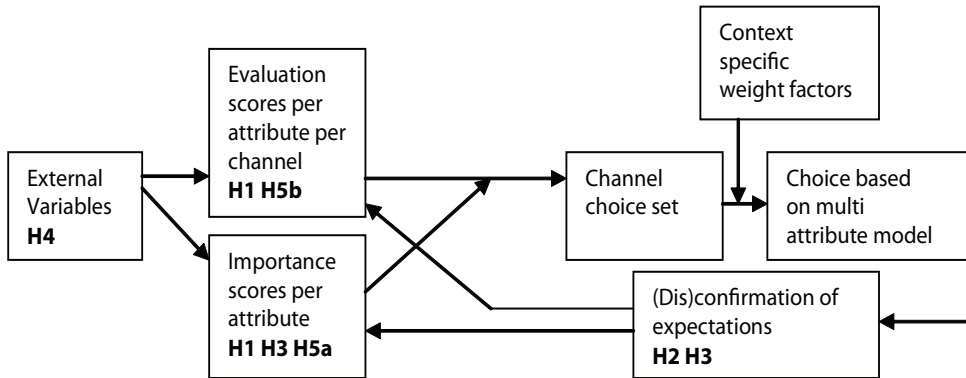
Figure 3.11 The multichannel dynamic model: hypotheses

- *Hypothesis 1: the weighting additive and the simple additive model predict the preference ranking of the channels comparable.*

The reasoning behind this hypothesis is obvious: the model is based on the logic of TAM to explain the channel choice set. As all attributes are important, the importance scores hardly differ and therefore their impact on the preference is small (conform the findings of the pilot research). This means there will be hardly any difference in the predicting power of both models and the question which strategy is used by the respondents has to be postponed till after the experiment.

- *Hypothesis 2: a positive or negative experience with the use of the mobile Internet will lead to a change in the channel preference choice set caused by a different score for the mobile Internet channel.*

This hypothesis is based on the Expectation Disconfirmation Theory. This change will be related to the experience: a positive experience will lead to a higher ranking; a negative experience will lead to a lower ranking for the mobile Internet channel. As the ranking is a "zero-sum game", an increase or decrease of the mobile Internet channel has impact on the ranking of the other channels as well.

- *Hypothesis 3: the attributes that change after the use of the mobile Internet are the attributes on which the mobile Internet either scores low (negative experience) or scores high (positive experience).*

Related to the model is the assumption that the use of the mobile Internet and the positive and negative evaluation lead to a re-evaluation of those attributes that have had the largest impact, either positive or negative. It might be assumed that on those attributes the attention of the respondents will be focused.

- *Hypothesis 4: the level of experience with mobile Internet will influence the (dis)conformation of experience.*

It might be expected that respondents with experience with mobile Internet will differ less in expectations than respondents without experience as they know what to expect. Experienced users will score higher on "as expected" compared to respondents who have no experience with mobile Internet. Experienced users will also change the ranking of the mobile channel less than consumers without experience.

- *Hypothesis 5a: a change in the channel choice set is caused by a change in the importance scores of the attributes.*
- *Hypothesis 5b: a change in the channel choice set is caused by a change in the evaluation of the mobile Internet channel.*

If hypothesis 2 is correct, a change in the channel preference choice set can be seen as an attitude change. Based on the weighted additive model changes in the preferences can be explained by changes in the importance ratings of the attributes and/or changes in the evaluation scores of the channels. Based on the simple additive model changes can only be explained by a change in the evaluation scores as the importance scores play no role in this model. If a change occurs without a change in the importance of the attributes, hypothesis 5b might be valid, therewith finding proof for the simple additive model. Then the change in the channel choice set might be caused by a different evaluation of the mobile Internet channel, without changing the importance scores of the attributes. In this line of reasoning the ranking of the mobile Internet changes because respondents re-evaluate the channel after the experiment. A positive evaluation leads to a higher position of the mobile Internet channel, a negative evaluation to a lower position.

3.10   Conclusions

In this chapter the second sub question, is it possible to arrive at a model based on these theories that explains the use of ICT enabled channels, has been answered. The theories have led to the formulation of a general model to explain multichannel behavior. The translation of this model into a questionnaire has led to the conclusion that the TAM constructs PU and PEOU are not suitable as attributes to explain the use of an ICT enabled channel in a consumer behavior context. As there is no consensus in the literature about the attributes, these have to be defined by qualitative research, where the laddering method has proven to be a usable method. The results of the pilot study confirm the model in general, but doubt is raised about the relevance of the decision making strategy that is used in the model: the simple additive and weighted additive have similar scores on predicting the most preferred channel. The model has been translated in a number of basic assumptions and a number of hypotheses. These assumptions and hypotheses will be tested in chapter 5 and 6. In these chapters the final sub question will be answered.

".... as far as this writer is concerned, it is not sufficient to say something like, 'the subjects for this study were 83 students at Lower Slobovia State University' and then proceed to formulate and test highly sophisticated behavior models."

Ferber, 1977, p. 57, 58

CHAPTER 4   METHODOLOGICAL CHOICES

4.0   Abstract

The survey framework consists of the choice of a survey method, the sample size and structure and the choice of the statistical methods. The face-to-face survey method is chosen as respondents have to use a mobile telephone to purchase travel insurance during the experiment. Although this method has its disadvantages, it gives control over the experiment which is of crucial importance in testing the hypotheses. An additional reason is the fact that respondents in the pilot study had some problems with conducting the experiment. As a random (probability) sample is not feasible, quota sampling is used, based on relevant socio-demographic characteristics. The sample size of 300 respondents is set before the survey is conducted and is based on relevant studies. A control group of respondents is used. They do not conduct the experiment but answer the questions about their channel preferences and the importance scores of the attributes nevertheless twice.

4.1   Introduction

In this chapter a start will be made with answering the third sub question:

- *Is it possible to confirm the model empirically?*

This will be done by an empirical survey that is meant to test the hypotheses of the model. Before conducting the fieldwork a number of methodological choices has to be made. This survey framework consists of a number of choices that are addressed in most handbooks on research (see e.g. Gilbert, 2001; Hoyle, et al., 2002; Wilson, 2006; Lazar et al., 2010). These choices are, although usually not explicit stated, related to the criteria for the reliability of the survey. Four general criteria are mentioned and defined in the literature (Tybout and Calder, 1977; Calder et al., 1981, 1982; Lynch, 1982, 1999; McGrath and Brinberg, 1983; Winer, 1999; Bagozzi et al., 1991; Hoyle et al., 2002; Roe and Just, 2009):

- construct validity: to what extent do the variables measure the constructs;
- internal validity: to what extent are the observed relations causal;
- external validity: to what extent can the results be generalized;
- ecological validity: to what extent is the research setting comparable to 'real situations'.

The construct validity has been extensively dealt with in the previous chapter. This chapter deals with the choices that are made in relation to the other three validity criteria. First choices that influence internal validity will be discussed, followed by choices related to external and ecological validity. The chapter ends with a choice between statistical tests; these tests are of influence on both internal and external validity.

4.2   Internal validity

Internal validity is concerned with the question whether the relations that are found are causal, which means that one has to be sure that the found relations are real and not due to other factors.[41] The same implies for finding no relation between variables: this should be due to the absence of a causal relation. As the model will be tested in the survey, it is important to make choices that have a positive effect on the internal validity. Three issues that are related to internal validity are of relevance for this survey: the survey method, the existence of a control group and the questionnaire.

Survey method

First of all a survey method has to be selected. The most used methods are face-to-face, telephone and Internet interviewing. The choice of a method has consequences for the internal validity of this survey. In the literature the survey methods[42] are compared with each other; not surprising in recent years the focus has been on the pros and cons of online research (e.g. Taylor, 2000; Johnson, 2001; Ilieva et al., 2002; Birnbaum, 2004; Mathy et al., 2002; Birnbaum, 2004; Hudson and Bruckman, 2004; Sparrow and Curtice, 2004; Deutskens et al., 2006; Sparrow, 2006; Stafford and Gonier, 2007; Comly, 2008; Malhotra, 2008; Chang and Krosnick, 2009; Markham and Baym, 2009; Maronick, 2011).
In table 4.1 a comparison of survey approaches is presented (based on Brown, 1938; Frankel and Frankel, 1977; Rosenthal and Rosnow, 1991; McDaniel and Gates, 1993; Salant and Dillman, 1994; Sudman and Blair, 1999; Simmons, 2001; Hoyle et al., 2002; Holbrook et al., 2003; Rosnow and Rosenthal, 2005; Deutskens et al., 2006; Wilson, 2006). In the last column the perceived effect on the internal validity is listed.

	FACE-TO-FACE IN HOME	FACE-TO-FACE STREET INTERVIEWS	TELEPHONE	SELF ADMINISTERED OFFLINE	SELF ADMINISTERED ONLINE	RELEVANCE FOR THIS RESEARCH
Control over interviewing process	Medium	Medium	High	Low	Low	Very important to assure the quality of the data
Questionnaire length	Long	Short	Medium	Medium	Medium	Important, number of questions is more or less fixed
Control of context and question order	High	High	High	None	None	Very important, given the structure of the survey

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41 A well-known example is the 'hidden third variable' that means that the causal relation between two variables is caused by a third variable (Hoyle et al., 2002), also called a spurious relation (Swanborn, 1977). A well known Dutch example is the 'relation' between the number of storks and the birth rate per region. This validity is however related to the interpretation of the results and will be discussed in the chapters that are concerned with the outcome of the survey.

42 Mobile telephone research is not reviewed in this literature. This is perhaps related to the barriers to use mobile research, namely low user receptiveness, incompatibility of mobile systems and the lack of best practices (Li and Townsend, 2008).

Ability to probe and clarify	High	High	High	Low	Medium	Important
Use of show cards, material	Possible	Possible	Hardly possible	Possible	Possible	Very important: use of the mobile phone
Motivate respondents	High	High	Medium	Low	Low	Important, because of the second (repetitive) part

Table 4.1 Comparison of survey methods

Given the fact that in this survey the respondents have to conduct activities on a mobile phone, the first choice is the face-to-face method. This is the only method that ensures the control over the experiment, where the interviewer can provide the mobile phone and make sure the respondent participates in the experiment. The results of the pilot survey also indicate that respondents might need help during the experiment with the mobile Internet. This means that this method ensures the highest internal validity: the results that will be found are at least based on answers of respondents who have actually conducted the experiment. The choice of a specific face-to-face method is still open. At this moment face-to-face in home interviewing has the advantage of the possibility of a more extensive questionnaire (compared to face-to-face street interviewing); for a definite decision other arguments play a role as well. These are based on the fact that during the interview an experiment is conducted.

Control group

Research based on an experiment is different from other research as the purpose is to show that changing one variable (in this case experience with mobile eCommerce) has its effects on other variables (preference ranking of channels). Internal validity means it has to be clear that the shown relationship is caused by the change in experience with mobile eCommerce. This raises the issue of the so-called testing effect (McDaniel and Gates, 1993). This effect refers to the possibility that the process of the experiment (by asking respondents about the importance of the attributes, the ranking of the channels and their evaluation of the channels) might have its own effect on the responses. To exclude this possibility a control group is formed of respondents who do not perform the experiment (experience mobile eCommerce). Instead of the experiment the interviewers pretend that they have made a mistake in the interview and ask the respondent to answer the question about the importance of the attributes again. Although respondents are 'tricked' it is obvious that this deception in no way violates ethical guidelines as they are used in research textbooks (e.g. McDaniel and Gates, 1993; Sommer and Sommer, 1997) and as these have been formulated by the American Psychological Association (Ethical Principles of Psychologists and Code of Conduct, 1992; cited by Sommer and Sommer, 1997; p . 23):

- "(a) Psychologists do not conduct a study involving deception unless they have determined that the use of deceptive techniques is justified by the study's prospective scientific, educational, or applied value and that equally effective alternative procedures that do not use deception are not feasible.
- (b) Psychologists never deceive research participants about significant aspects that would affect their willingness to participate, such as psychical risks, discomfort, or unpleasant emotional experiences.
- (c) Any other deception that is an integral feature of the design and conduct of an experiment must be explained to the participants as early as is feasible, preferably at the conclusion of their participation, but no later than at the conclusion of the research".

Questionnaire structuring

As the questionnaire is based on previous research, the wording of the questions and the used scales are not an issue, but the questionnaire structure may have a negative effect on the internal validity that has to be avoided. Research shows that the use of different scales, different sequence of questions and different response orders influence the data (Krosnick and Alwin, 1987; Krosnick, 1999; Cabaniss, 2003; Straub et al., 2004; Holbrook et al., 2007; Malhotra, 2008, 2009). As it has been noted that "the order in which subjects utilize attributes is quite relevant" (Nakanishi and Bettman, 1974) and that research has shown that it is important to randomize response options (Malhotra, 2009), the sequence of the attributes has been alternated. In total 4 different versions have been used. In appendix 3 one version is included. Conform Simmons et al., (1993) the general channel preference has been asked before evaluating the channels on the attributes.

4.3   External validity

Based on the choices influenced by internal validity, a choice has been made for conducting the interviews face-to-face and to use a control group. More choices have to be made based on external validity. External validity refers to the question whether the results can be generalized to the populations and the elements of interest in the survey (Hoyle et al., 2002). Generalizing to other populations is evident: if the results are only valid for the respondents interviewed, the usability of the survey is very low. Generalizing to the elements of interest means in this thesis generalizing the results to other channels and other channel choice settings. Is it possible to generalize the causal relations to other channels? This issue will be discussed in the final chapters. In this paragraph choices are discussed that influence the possibility of generalizing the results to other populations. External validity is related to the quality of the survey. Quality can be defined as the absence of survey errors. The major sources of survey error are sampling, coverage, non-response and measurement (Couper, 2000; Grancolas et al., 2003; p. 544). Sampling error is the difference between the sample estimate and the value of the population (Churchill, 1999; Keller and Warrack, 2000; Grandcolas et al., 2003; Wilson, 2006) and can be reduced by sampling method and sample size. Coverage or sample frame error occurs if there is a mismatch between the target population and the frame population, where the frame population is the population from which the sample is drawn (Groves, 1990; Couper, 2000). Non-response error consists of refusal and non availability that cause the participating respondents to differ from the not responding population. Data error consists of respondent's error by accident or intentionally (e.g. socially desirable response tendencies; Steenkamp et al., 2010), interviewer error (recording answers incorrectly, fraud) and data analysis error. Non sampling error has been found to be 95% of total survey error (Assael and Keon, 1982). In table 4.2 the survey methods are compared on these possible sources of errors.

	FACE-TO-FACE IN HOME	FACE-TO-FACE STREET INTERVIEWS	TELEPHONE	SELF ADMINISTERED OFFLINE	SELF ADMINISTERED ONLINE
Response rates	High	Low	Medium	Low	Low
Suitability for geographically dispersed sample	Low	Low	High	High	High

	FACE-TO-FACE IN HOME	FACE-TO-FACE STREET INTERVIEWS	TELEPHONE	SELF ADMINISTERED OFFLINE	SELF ADMINISTERED ONLINE
Coverage, sample frame error: proportion of the population not covered by the frame	Random walk method in theory possible; in practice is geographical clustering necessary; interviewers tend to select households they like and which they perceive as having a higher income (Carter et al., 1963); key demographic groups are hard to access, like the young, the mobile, the upscale males (Cooke et al., 2009)	Random selection of respondents is possible	Random dial method possible (Glasser and Metzger, 1972; Holbrook et al., 2003), but lists are incomplete(Salant and Dillman, 1994) as one in five households move every year	Random method in theory possible; those who have strong opinions might only take the time (Wilson, 2006)	No standardized addresses available (Grandcolas et al.,2003; Sparrow and Curtice, 2004); people change their addresses more frequently (Curasi, 2001); biggest threat to inference from Web surveys (Couper, 2000) particular problem (Miller, 2001); problem of self selection (Birnbaum, 2004)
Coverage, sample frame error: how different is the covered population from the not covered population			Issue of people not listed; people without a telephone are different on a large number of variables (Groves, 1990; Salant and Dillman, 1994); people using a mobile phone and no landline (Schillewaert and Meulemeester, 2005)		Doubt whether there are same attitudes and behavior in Internet and non-Internet population (Couper, 2000; Curasi, 2001); online sample more financially sophisticated than the total population (Cooke et al., 2009); resembles the total population more and more (Taylor, 2000)

	FACE-TO-FACE IN HOME	FACE-TO-FACE STREET INTERVIEWS	TELEPHONE	SELF ADMINISTERED OFFLINE	SELF ADMINISTERED ONLINE
Sample error		Haphazard sampling procedures (Hornik and Ellis, 1988)	Clustering might cause errors; less than in face-to-face interviews (Groves, 1990)		
Non response error: refusal	Experience of interviewer reduces refusals (Groves et al., 1992); response rates are declining due to social change (Goyder, 1985)	Experience of interviewer reduces refusals (Groves et al., 1992); high non response rates (Hornik and Ellis, 1988); female interviewers have lower refusal rate (Hornik and Ellis, 1988)	Experience of interviewer reduces refusals (Groves, 1990); higher refusal rate among elderly (Groves, 1990); lower response rate than face-to-face (Holbrook et al., 2003); declining response rates since the 1990s (Keeter et al., 2006)	Non response can be a serious problem, is affected by the topic (Salant and Dillman, 1994); lowest response rates (Hoyle et al., 2002)	No statistics available if posted on web portals; e-mail surveys have lower response rate then off line mail surveys (Couper, 2000); Grancolas et al., 2003); online survey has a higher response rate then mail survey, using the same sample frame (Deutkens et al., 2006); response rates are declining to perhaps 4% (Grandcolas et al., 2003); most researchers have found that response rates are lower than for other methods (Sparrow and Curtice, 2004)
Non response error: non availability	Call backs expensive	No possibility	Call backs are relatively easy		
Data error: accidental respondent error	high quality of information (Hoyle et al., 2002)			No pressure in answering (Hoyle et al., 2002)	No pressure in answering (Hoyle et al., 2002)

	FACE-TO-FACE IN HOME	FACE-TO-FACE STREET INTERVIEWS	TELEPHONE	SELF ADMINISTERED OFFLINE	SELF ADMINISTERED ONLINE
Data error: intentional respondent error	Less social desirable answers because of trust in the interviewer (Holbrook et al., 2003); more social desirable answers because of the small social distance (Holbrook et al., 2003; cf. Goffman, 1959); evidence for less social desirable answers compared to telephone respondents (Holbrook et al., 2003); skills of interviewer are important in getting quality data (Cooke et al., 2009)	Less social desirable answers because of trust in the interviewer (Holbrook et al., 2003); more social desirable answers because of the small social distance (Holbrook et al., 2003; cf. Goffman, 1959); more social desirable answers because of the lack of privacy	More social desirable answers because of the lack of trust; less social desirable answers because of the greater social distance; evidence for more social desirable answers compared to face-to-face respondents (Holbrook et al., 2003)	Less social desirable answers because of large social distance, privacy; more social desirable answers because of lack of trust	Less social desirable answers because of large social distance, privacy; more social desirable answers because of lack of trust (based on arguments of Holbrook et al., 2003); absence of social desirability pressures (Cooke et al., 2009)
Data error: accidental interviewer error (recording)			Reduced quantity on open questions (Groves, 1990); elderly respondents more susceptible to interviewer effects (Groves and Magilavy, 1986)		Higher quality of answers on open-ended questions than off line survey (Curosi, 2001)
Data error: interviewer bias	Bias higher than with telephone interviewing (Hoyle et al., 2002)			No interviewer bias (Salant and Dillman, 1994)	
Data error: intentional interviewer error				No interviewer bias	No interviewer bias

Table 4.2 Survey methods and errors

The face-to-face method has some disadvantages compared to the other methods. In the previous paragraph it has become clear that it is the only method that guarantees that respondents actually perform the experiment. Without internal validity it is not very useful to discuss whether the results can be generalized towards the other populations. Therefore choices to achieve the highest possible external validity have to be made within the framework of the face-to-face interviewing method. The

choices will be based on decreasing the error as much as possible. First the possible sample method and the possible sample size are discussed and choices are made to limit sample error. Secondly choices regarding the questionnaire are made to reduce respondent error. Thirdly the organization of the fieldwork - and therewith choices limiting the potential interviewer error – is determined.

Sample method

Sample error (and therewith external validity) is related to sample method. There are two classes of sample methods: probability and non-probability sampling. Probability sampling means that every element in the whole population has a known positive chance of being drawn; non-probability sampling means that the probability of selecting an element has an unknown probability (Semon et al., 1959; McDaniel and Gates, 1993; Sommer and Sommer, 1997; Riley et al., 2000; Arber, 2001; Baker, 2002; Hoyle et al., 2002; Wilson, 2006; Wolverton, 2009). With probability sampling it is possible to generalize the results of the research to the general population of which the sample was drawn. There always remains the sampling error, but this error can be lowered by increasing the sample size and is measurable[43]. The disadvantages of probability sampling are the costs, amount of time and difficulty of execution (Semon et al., 1959; McDaniel and Gates, 1993; Baker, 2002). This is related to the fact that non response due to unavailability should be minimized as everybody should have an equal chance of being interviewed. With non probability samples the conclusions are sample specific; there is no statistical measure to generalize to the general population. The question is whether estimation of population values is necessary, because that would mean a probability sample is necessary. Given the choice for the face-to-face method a probability sample will result in a very complicated, complex and costly fieldwork operation. Therefore a non probability sample, without negative consequences for the usability of the results of this research, would be preferred.

Several arguments have been used to state that there are circumstances in which a non-probability sample is sufficient. Since long (Peterson and O'Dell, 1950) attention has been drawn to the fact that government/public opinion research differs from commercial research regarding kind of work, financial resources available and repetitive nature of the research. In forecasting election results for instance it is of the utmost importance to be able to estimate the population values. In motivation research where one wants to find out something about motives and attitudes it is not necessary to make correct estimates of population distributions (Hoyle et al., 2002). Another reason might be the need for experimental control that overrides sample considerations (Hoyle et al., 2002). Non probability sampling is seen by some authors (e.g. Saland and Dillman, 1994; Calder et al., 1981) as appropriate for exploratory research or theory testing. This is in line with Popper's falcificationist philosophy of science in which one cannot prove theories but they can escape refutation (Popper, 1978/2009; Wolverton 2009). These arguments apply to this research.

To increase the reliability of the results, part of the bias can be eliminated by using carefully specified and defined quota controls and by using experienced interviewers (Baker, 2002). It even has been argued that there is no reason "why probability sampling should be considered 'better' than non-probability sampling. Each method is appropriate for different research questions, and sometimes a research question will be better addressed by choosing a non-probability sampling method" (Argyrous, 2005; p. 205). Another line of arguing in favor of non probability sampling is based on the shortcomings of probability sampling. All advantages may disappear because of non response, which makes it more difficult to generalize to the total population as the non respondents might have different characteristics and the reason for the non response is not known (e.g. Dunkelberg and Day, 1973; Melnick et al., 1991). Non sampling errors might be more important than sampling

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43 Methods for generalizing from the sample to the total population can be found in every 'handbook' about statistics (e.g. Edens and Pijlgroms, 1990; Buijs, 1998; Keller and Warrack, 2000).

errors, not only non response, but also for instance the interviewing situation (Peterson and O'Dell, 1950) and "the hundred and one other similar hurdles that stand between the investigator and the truth he seeks" (Brown, 1947; p. 337).

The fact remains that the results cannot be generalized to the total population. The question is whether that is a problem in this kind of research. An answer can be found in Appendix 2 in which a review of 173 surveys is listed. These surveys are selected based on their relevance for the subject, which means they deal with the use of an ICT enabled channel (in most cases the Internet). Only articles that appeared in journals are included, therewith excluding the "research in progress" papers that appear on congresses. In table 4.3 the used sample methods are summarized.

	Absolute	Percentage
PROBABILITY SAMPLING	52	30%
of which:		
Random sample	16	9%
Client/users of website/firm/Customer base	24	14%
Panel	10	6%
Other	2	1%
NON PROBABILITY SAMPLING	121	70%
of which:		
Students	89	51%
University personnel	5	3 %
Banner on sites	8	5 %
Online volunteers panel	2	1%
Convenience	5	3%
On location	9	5%
Other	3	2%

Table 4.3 Sample methods

Without claiming a complete representative view on the literature that appeared between 1995 and 2010 on ICT enabled channels, it may be assumed that the review gives an appropriate picture of the used sample methods. About 30% of the reviewed research may be assumed to be probability sampling, therewith assuming that the used panel samples and used random samples really are random (in most cases this cannot be concluded from the article[44]). The same applies for the use of customer base/clients: it is assumed that the research is meant to generalize to the client population and not the total population (as it would then be non probability sampling). The real percentage of probability sampling is probably much lower; perhaps not even reaching the 10%.

44 This is not uncommon: a review of research in the Journal of Marketing Research from 1964 to 1974 searched for the sample specification in 356 articles. According to the authors in 67% of the surveys the sample procedure was not specified (Permut et al., 1976).

The review shows that a majority of the surveys cannot be generalized to the total population, which seems to be no problem in scientific research. In that sense scientific research resembles market research, as it has been stated that "a large proportion of marketing research studies use non-probability sampling methods as they can be executed more quickly and easily than probability samples" (Wilson, 2006; p. 200). Given the structure of this survey (exploratory, generalization of the results to the general population not necessary) the choice is for face-to-face non probability sampling.

Non probability sampling

In choosing the non probability sample several options are possible. The most obvious option is using a student sample, which has been used in more than 50% of the reviewed surveys. This very high number is even low compared to some reports on research in social psychology where 75% has been reported (Carlson, 1971). Liefeld (2003) reported a content analysis of consumer research reported in eight academic journals and found that 60% of the studies used university students. Henry (2008a) reports on the use of students in prejudice research in the main psychology journals (period 1990 – 2005) and finds within the eight reviewed journals a lowest score of 70% and a highest score of 90% (Henry, 2008a). Similar results are reported for consumer research (Simonson et al., 2001). The discussion about using student samples is going on for more than six decades (e.g. McNemar, 1946; Enis et al., 1972; Shuptrine, 1975; Ferber, 1977; Gordon et al., 1986; Greenberg, 1987; Hughes and Gibson, 1991; Petty and Cacioppo, 1996; Lynch, 1999; James and Sonner, 2001; Johnson, 2001; Peterson, 2001; Wells, 2001; Liefeld, 2003; Berander, 2004; Fiske, 2008; Glick, 2008; Henry, 2008a, 2008b; Rudman, 2008) and has its defenders and opponents. In three ways biases might be introduced by using a student sample: the difference in point estimates (mean differences between the student and the total population), relationship among variables and the topics studied and questions asked (Wells, 1993; Sears, 2008). Besides these methodological reasons attention has been drawn to the impact it has on the image of the research (Johnson, 2001). A meta-analysis of Peterson (2001; p. 458) leaves no room for discussion in concluding:

> "The primary implication of the present research is that social science researchers should be cautious when using college student subjects and be cognizant of the implications of doing so if the purpose of the investigations is to produce universal principles. More specifically, the present research suggest that, by relying on college student subjects, researchers may be constrained regarding what might be learned about consumer behavior and in certain instances may even be misinformed. Even when the research focus is on theory application, or the emphasis is on internal validity, the use of college students as research subjects should be carefully scrutinized in view of the effect size differences and similarities documented in the present research."

Given the statement that "research results based on college students need to be replicated with nonstudent subjects prior to the generation of universal principles" (Peterson, 2001; p. 458) the advantages of a student sample do not outweigh the disadvantages. Based on a quantitative meta-analysis of research on TAM it has been concluded that using a student sample affects the relationships. "Students are a more homogeneous group than non students and students have a strong tendency to comply with authority. Thus assuming a relatively high amount of early adopters, larger effect sizes of both social and technology-related constructs make sense" (Schepers and Wetzels, 2007; p. 100). Recent research (Van Lange et al., 2011) shows that psychology and economics students differ and concludes that "given that research by psychologists and economists tends to rely on samples from their own participant pools – typically consisting of psychology and economic students, respectively – it is important to consider different findings in terms of basic psychological differences between the samples that various scientists use" (p. 5,6). The issue of

adjusting the topics studied to the students might apply in social psychology research, but is less important in consumer behavior studies. First of all students are (in the Netherlands) consumers of many products; the student loan system grants them a genuine income, usually supplemented by some (odd) jobs. The topics studied in the surveys with student samples in appendix 2 range from computers to books to legal services to banking. Books are the most studied subject, followed by digital equipment (computers, cameras) and music.

Based on these arguments the use of a student sample is rejected. Three alternative options are: snowball method, judgment and quota sampling. The snowball method is mostly used for finding difficult target groups (McDaniel and Gates, 1993; Sommer and Sommer, 1997; Hoyle et al., 2002), which is not applicable here. That leaves the judgment and quota sampling. With judgment sampling every sample member is a deliberate choice and it is especially suitable for research in which the sample size is small (Wilson, 2006). Usually it is a tradeoff between getting more information of relevant respondents and generalization to the general population (Sommer and Sommer, 1997). One might for instance interview only heavy users of the Internet to understand all the activities people take online; therewith getting more information on the use of large number of activities, but losing the possibility to generalize to the Internet users. There seems no reason for using this complicated method in this survey, which leaves quota sampling as the remaining option.

Quota sampling is defined as "samples in which quotas are established for population subgroups. Selection is by nonprobability means" (McDaniel and Gates, 1993; p. 487)[45]. The advantage of this sampling method is that the groups of interest are included in the research, which is not certain with convenience sampling. The basic goal is to gather a sample that replicates the population, although it still is a nonprobability sample. By including the relevant quotas it is possible to come to conclusions about the behavior of the different subgroups in the sample and if "the control characteristics used in designing the cells are relevant to the research questions then quota sampling is superior to judgment and convenience sampling in terms of sample representativeness" (Wilson, 2006; p. 207). It has even been argued that quota sampling has an advantage compared to probability sampling: for small scale samples (200-300) surveys, "especially where the non-response may be quite large, non-probability sampling and inference based on models for the population will have the advantage" (Melnick et al., 1991; p. 577). This is caused by non-response: "All advantages of randomization disappear in the presence of non-response" (Melnick et al., 1991; p 578). Since non response in probability sampling has increased substantially since the 1990s due to a higher unavailability of the respondents and a higher refusal rate (Keeter et al., 2006), it is becoming more and more an issue (e.g. Groves, 2006; Groves and Peytcheva, 2008)[46]. The next necessary step is to define the control characteristics to be used in the quota sampling based on relevance for the research question. Then the quotas can be determined (cf. Hauser and Hansen, 1944).

Quota sampling: the relevant socio-demographic characteristics

In the multichannel literature there is much attention for consumer characteristics in describing the use of a new channel like the Internet. From the literature it can be concluded that consumer demographics do matter. In research it is found that Internet users and buyers are younger and have a higher income and education. Interesting enough the same conclusion has been drawn about in-home shoppers long before the use of the Internet (e.g. Urbany and Talarzyk, 1983). However: it is not clear yet whether this is related to buying behavior in general, related to the kind of products/ services which are bought by a consumer segment and that are available on the Internet or related to the characteristics of the consumers. Hauser et al. (2006) state that other studies have "failed to

45 If the selection is based on probability sampling, it is called a stratified sample.

46 Even in a so called "rigorous survey" the response rate was only 50% (Keeter et al., 2006).

validate these findings" (p. 689). It is obvious that some products/services are more bought than others and that those products have a specific user group. Instead of Internet profiles one gets product user's profiles. This is confirmed by a survey from the CBS (De Digitale Economie 2005), which states that there is a relation between the amounts of money spend on the Internet and age, because older people buy above average online holidays. From the statistics, it shows that these are especially the consumers between 25 and 45 who do most online shopping. The issue of product and service characteristics has been addressed in chapter 1. In table 4.4 a summary is presented of the consumer characteristics that have been found important in explaining the use of Internet.

CONSUMER CHARACTERISTIC	LITERATURE	FOUND RELATION	THEORETICAL EXPLANATION
Gender	Van Slyke et al., 2002; Rodgers and Harris, 2003; Yang and Lester, 2005; Noce and McKeown, 2008; Branca, 2008; Kivijärvi et al. 2008	Gender is a significant predictor of intention to purchase online; no difference in Internet use in Canada	Products bought by men and women differ; women may lack experience with technology; women find it less satisfying and less convenient
Age	Korganonkar and Wolin, 1999; Donthu and Garcia, 1999; Sathye, 1999; Potalogu and Ekin 2001; Howcroft et al, 2002; Perotti et al., 2003; Thomson and Laing, 2003; Lam and Lee, 2005	Relationship is not clear	Younger persons use the Internet more, but buying is also related to products/ services
Income	Korganonkar and Wolin, 1999; Balanis and Vassileiou, 1999; Donthu and Garcia, 1999; Ramasami et al., 2000; Mathwick et al., 2001; Mahmood et al., 2004; Soopramien and Robertson, 2007; Noce and McKeown, 2008	If a relation is found, the relation is the higher the income the more online purchasing	Buying power of the wealthier consumer; transaction costs theory as wealthier consumers have more to gain by the advantages of the Internet
Education	Donthu and Garcia, 1999; Mahmood et al., 2004; Teo et al., 2004; Noce and McKeown, 2008; Branca, 2008	No relation found, except in Noce and McKeown (2008): education is one of the most discriminating factor	Relation between income and education
Sexual preference	Koyuncy and Lien, 2003	Gays and bisexuals buy more online	
Grade of urbanization	Doffer et al., 2005; Noce and McKeown, 2008	More single channel use of households with young children in urban areas; more use of the Internet in urban areas (in Canada)	Availability of stores

Table 4.4 Relevant background variables

Research reveals that consumer behavior differs within various cultures (e.g. Bagozzi et al., 2000; Lee, 2000; Simon, 2001; Kacen and Lee, 2002; Lightner et al., 2002; Nguyen et al. 2003; Tsikriktsis, 2002; Junglas and Watson, 2004; Laroche et al. 2004b; Ueltschy et al., 2004; Steenkamp and Geyskens, 2006; see also Hofstede, 2003, and Triandis, 2004, for a general perspective on cultural differences).

As these results are based on international surveys and cultural differences might play a role, the results are compared with statistics of the Dutch Census Agency (CBS), given the fact that the fieldwork will be conducted in the Netherlands. In the following paragraphs the relation between Internet use and the mentioned background variables for the Dutch population will be discussed.

Gender

Statistics of the CBS (2010) confirm some of the above mentioned findings on the relation between the use of the Internet and gender:

	Internet access	Broadband	Used Internet < 3 months
men	94 %	84 %	92%
women	92 %	75 %	87 %

Table 4.5 Use of the Internet, Netherlands, 2009

Although the Internet access is almost equal, men use the Internet more intensively than women. A closer look at the persons who have used the Internet the last three months reveals the following use:

Used Internet last three months	at home	at work	communi-cation	information	commercial total	banking	financial	buy/sell
men	98 %	54 %	97%	90%	82%	80%	10%	57%
women	99 %	48 %	97%	89%	77%	76%	3%	49%

Table 4.6 Specific use of the Internet, Netherlands, 2009, gender

It is obvious that men use the Internet more at (or during) their work. This might be related to the participation of men and women in the labor market and the kind of work. Looking at the usage, men and women use it as often for communication and information. There is however a difference in the commercial use: financial transactions and the actual buying.

Age

From the CBS statistics (2009) it can be concluded that there is indeed a relation between age and the use of the Internet[47]. This starts with the fact that there is a correlation between Internet access and age, which is linear and goes from 100% for the age group 12-15 years to 64% for the

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47 This somewhat troublesome relationship between the use of the Internet and age is also found in the literature on diffusion and adoption of innovations. Rogers (1995) reviewed 228 studies of which only half showed a significant relationship between age and adoption behavior, but some concluded that the adopters are younger and others conclude that adopters are older. Similar results are found by Gilly and Zeithaml (1985; Zeithaml and Gilly, 1987) who find that elderly tried and adopted ATMs less than the younger consumers, but used Electronic Funds Transfer more than the younger consumers. In reviewing the literature on diffusion theory Gatignon and Robertson (1985) conclude that "there is not a generalized innovator across product category or interest domains" (p. 861); only that innovators are drawn from the heavy users within a product category. Recent research (Mitzner et al., 2010) concludes that "older adults' relationship with technology is much more complex than would be suggested by the stereotype of older adults simply being afraid and unwilling to sue technology" (p. 1719).

age group 65 – 75 years. Looking at the use (used during the last 3 months), the relation is also completely linear, ranging from 100 % among the youngest group to 53 % for the age group 65-75 years.[48]Looking only at the user groups, the differences become less. The use for communications is the highest between 15-25 years (99 %), but now the lowest score is 93 % for the age group 65-75 years. Buying via the Internet is however age related. The group between 25-35 years buys most on the Internet (84 %), followed by the 'neighboring' age groups. Above 65 years only 35 % has used the Internet as a transaction channel in the last 12 months; between 55-65 years only 54%.The products and services they bought differ (not surprisingly) per age group. It is remarkable that from the age group 55 – 65 years 55% of the consumers who bought via the Internet has bought travel services; the so-called Cyberseniors (McMellon et al. 1997) score the highest of all age groups.[49]

Income[50]

The relationship between Internet use and income level is also found in the CBS statistics. The higher the income level, the more Internet access; ranking from 85 % for the lowest income group to 98 % for the highest income group. The same applies for buying on the Internet. Looking only at people with a purchase on the Internet during the last 12 months, the lowest income group has the highest score for buying the category cloths and sporting articles.

Education

In the results of the CBS (2009) the access to the Internet is positively related to educational level and the use of the Internet (if one has access) is also positive related to the educational level. Of the people who used the Internet, the use is also different. Here it is found that the higher the educational level the more the Internet is used for information search about products and services. This is remarkable, because such a relation has not been found between the use and the income level (all income levels scored more or less the same on these two items). Looking at the other data of the CBS the correlation can be partially explained by the factor age, where the older people use the Internet less for information search. Looking at the people with Internet use and actually using the Internet as the purchasing channel, the results are even more contrasting: for the lower educational level 54% during the last 12 months; for the higher educational level 84%.

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48 It can be stated that the oldest age group is catching up rapidly: in 2005 (CBS 2005) the figure was only 34%.

49 In the survey the question about what was bought, if the respondent bought the last 12 months via the Internet, was not presented to the age group 12-15 years and 65-75 years.

50 In some publications (Picot et al., 1997; Wigand, 1997; Mahmood et al. 2004; Chu et al., 2005) the reduction of the transaction costs for the consumer is seen as a major reason for using the Internet leading to a "frictionless economy" where transaction costs are a small supplement to the prices paid for goods and services (Sampson, 2003). This approach settles in the Transaction Costs Economics (TCE), which started with the publication of Coase's article (1937; see Posner, 1993 for an overview of his work) about the nature of the firm. One of the aspects of the theory is the fact that with every transaction costs are involved, due to among other things the costs of gathering information, asymmetry of information and protection for opportunistic behavior (Rindfleisch and Heide, 1997; Stiglitz, 2000; Rao, 2003; Tyagi, 2004). The choice between markets and hierarchies is determined by the difference in transaction costs (Geyskens et al., 2006; Kemp, 2006), where the assumption is that market governance is more efficient than transactions performed within the firm, although certain dimensions of transactions (e.g. asset specificity, uncertainty, transaction frequency) might result in a shift from market to hierarchy, making it more efficient for a firm to conduct the transactions within the firm (Williamson, 1975, 1985, 1996, 2002; Phelan and Lewin, 2000). Firms and markets are seen as alternative modes of organization (Demsetz, 1995; Williamson, 1996; Simon, 1991). Based on these assumptions it can be argued that the Internet will reduce the transaction costs for consumers by the ease of use for information search, comparing products and prices at lower costs, i.c. time (cf. Bakos, 1991), although some doubts have been raised about these arguments, due to the product category (for fruit the offline environment offers more information than the online environment; Degeratu et al., 2000) and information overload (Grover et al., 2006). Other examples of the application of TCE in online channel use are given by Deveraj et al. (2006) and Ghose (2009).

Other relevant characteristics

In the literature on ICT enabled channels a large number of other relevant consumer characteristics have been introduced; characteristics that can be defined as psychological characteristics. Trust and perceived risk (e.g. Miyazaki and Fernandez, 2001; Schoenbachler and Gordon, 2002; Swaminathan, 2003; Biswas and Biswas, 2004; Ueltschy et al., 2004) can be seen as psychological consumer characteristics (see Bhattacherjee, 2002 for an overview). The same applies to motivation (Hoffman and Novak, 1996, 1997; Childers et al., 2001; Kaltcheva and Weitz, 2006). These characteristics can hardly be included in the quota sampling.

Different but related characteristics are experience/past behavior (e.g. Gounaris et al., 2005; Kim and Malhotra, 2005; Falk et al., 2007; Hernandez et al., 2010), personality (Devaraj et al., 2008) and technology readiness (Parasuraman, 2000; Tsikriktsis, 2004; Yen, 2005; Lin et al, 2007; Massey et al., 2007), which seem related to attitudes toward the channel use and therefore the dependent variable that has to be explained by the model. This means these characteristics cannot be taken into account in developing the quota sample, leaving aside the discussion whether this would be possible. Experience with mobile Internet will be asked in the survey and will be used in analyzing the results.

This analysis of the background variables shows that it is important to use a number of background variables in a Dutch survey as the use of a newly introduced ICT enabled channel (Internet) differs per socio-demographic group. The grade of urbanization (see Vliegen and Van Leeuwen, 2006a, 2006b for the Dutch situation) will be asked in the survey and the importance will be reviewed in the analysis.

Sample size

Sample size is of influence on the external validity. As a rule of thumb it can be argued (all other elements being equal) that the larger the sample size the larger the external validity. The size of the sample has of course other implications as well: costs of the fieldwork and fieldwork period. Therefore a tradeoff has to be made. In this thesis the sample size is based on the relevant surveys. The reviewed literature in appendix 2 shows that the range of the used sample sizes differs from 44 (Komiak et al., 2004/5) to 8717 (Koyuncu and Lien, 2005; panel data analysis has been excluded). If only the surveys that use statistical analyses are taken into account the smallest sample is still less than 90 (namely 86, Liang and Huang, 1998 and 89, Cai and Xu, 2006). This broad range hardly gives an indication for the necessary sample size. In table 4.7 the sample sizes of the surveys are classified. The panel surveys have been excluded; for surveys in which more than one sample has been used (e.g. several experiments) the different sample sizes have been counted, adding to a total of 188 sample sizes.

Sample size	Number of surveys	Percentage of surveys
Less than 100	22	12%
100 till 200	53	28%
200 till 300	36	19%
300 till 400	22	12%
400 till 500	16	9%
500 till 600	8	4%
600 till 700	6	3%
700 till 800	3	2%

800 till 900	2	1%
900 till 1000	5	3%
1000 and more	15	8%
TOTAL	188	

Table 4.7 Sample sizes in Internet related research

Another approach is to focus on surveys that have the same survey topic, namely financial services. In table 4.8 a subset of appendix 2 is presented, excluding one survey (Devlin and Yeung, 2003) that uses secondary data.

AUTHOR AND PUBLICATION	SAMPLE METHOD	SAMPLE SIZE	RESEARCH TOPIC
Bhattacherjee 2001a MIS Quarterly	Customer base of online banking division	Net 122 Gross 1000	EDT tested with online banking Online banking
Bhattacherjee 2001b Decision Support Systems	Messages on 100 online message boards	Net 172	EDT tested with online brokerage Online brokerage
Chau et al. 2002 Communications of the ACM	Students in Hong Kong and USA	Net 269 Gross Unknown	Cultural influence on online behavior of consumers
Curran et al. 2003 Journal of Service Research	Random sample; phone interviews	Net 628 Gross 2352	Use of SST in banking industry: ATM, bank-by-phone, online banking
Gu et al., 2009 Expert Systems with Applications	Customers who used mobile banking service within bank in Korea	Net 940	Factors that contribute to the intention to use of mobile banking services; based on TAM
Lai and Li 2005 Information & Management	Students (business graduate students Hong Kong)	Net 241 Gross 312	Testing TAM and Internet banking acceptance for different groups: age/gender/IT competence

Liao and Cheung 2002	Regular web-users in Singapore; not specified; age young (20-35), education high	Net 323	Use of e-banking combined with perceived usefulness
Information & Management			e-banking
Ramaswami et al. 2000	National mail panel; income > $ 25,000	Net 413	Use of the online channel for purchasing financial products
International Journal of Electronic Commerce		Gross 700	Financial products
Sundarraj and Wu 2005	Students of Canadian university	Net 99	Testing of TAM model for banking technologies
Electronic Commerce Research and Applications		Gross 187	
Tan and Teo 2000	Students (39%) in convenience sample in Singapore; online questionnaire personalized messages sent	Net 454	Integrating TPB and IDT to predict intention to use Internet banking
Journal of the AIS		Gross 1686	
Teo, Tan and Peck 2004	Online clients of stock brokerage firm as sample of adopters Sample of non adopters not clear	Net 208 adopt 222 non-ad	Characteristics of adopters of Internet stock broking in Singapore
Behavior & Information Technology			
Walker and Johnson 2005	Face-to-face interviews in urban shopping centers	Net 180	Usage of Internet banking services
Journal of Financial Services Marketing			
Venkatesh and Ramesh 2006	Undergraduate students in university in US and Finland	Net 201 and 169	Web and Wireless site usability
MIS Quarterly	Second study 766 visitors of Finnish theater; movie ticket E 15	Gross Unknown	Airline industry Second study: banking, news, shopping, tourism

Table 4.8 Samples sizes in Internet and financial services related research

The average sample size of these surveys is 333 respondents. If the two extremes (3804 and 99 respondents) are eliminated, the average sample size is 300 respondents. Following Simmons et al., (2011) the sample size is determined before the research is conducted and is, in accordance with the found results, set at 300 respondents. Based on a sample size of 300 respondents and statistics (CBS, 2009) on the Dutch population distribution the following quotas can be calculated:

educational level	15-25 years		25-35 years		35-45 years		45-55 years		55-65 years		65-75 years	
	men	women	men	women	men	women	men	women	men	women	men	women
low	13	12	5	4	8	7	8	10	8	12	5	10
middle	9	10	10	10	13	15	12	12	10	8	6	5
high	1	2	8	9	10	9	10	7	8	4	4	2

Table 4.9 Distribution of the sample, based on population figures 2009

Interviewers

It is obvious that the interviewer bias in face-to-face research can be very large. As Brown stated already in 1938: "People unintentionally but instinctively pick well-painted houses, well-dressed people. Men prefer red, women blue. And gentlemen prefer blonds" (p. 360).[51] The quota sampling method restricts this bias to a certain extent. The interviewers have to find respondents fitting into the different quota sets. The questionnaire length (on average 30 minutes in the pilot study) and the complexity of the survey (with the experiment) make street interviews hardly possible. Therefore the interviewers have been instructed to select respondents within their own network. The interviewers were paid per completed interview.

A choice has been made between a small and a large interviewers group. The advantages of a small number of interviewers are reliability (by having to select only a small group), consistency and control over the interviewers and therefore it is assumed that the interviewer error can be limited as much as possible. However, the structure of the fieldwork means that interviewers select respondents within their own network. A limited number of interviewers increases the interviewer bias. Therefore a large number of interviewers (30) has been involved in the survey. The interviewers have been instructed personally.

The respondents did not receive any incentive. Although this might increase the response rates (cf. Willimack et al., 1995), the structure of the sampling method reduces the importance of the response rates and the effects of incentives on data quality are disputed (cf. Davern et al., 2003).

4.4 Ecological validity

Ecological validity or realism (e.g. Lynch, 1982; Winer, 1999) has been defined as "whether the research study (tasks, stimuli, settings) was realistic and, therefore, the results are likely to be generalizable to a more natural environment" (Winer, 1999; p. 350). It can be seen as a perspective on external validity, but is also related to internal validity: "When problems of internal validity are overcome, it is often assumed the results obtained in a field setting have broad ecological validity" (Tybout and Calder, 1977; p. 8). Therefore the choices that influence ecological validity are treated separately. Two choices are of relevance here: the interview setting and the experiment with the mobile website.

Interview setting

The choice has already been made for face-to-face interviewing with the use of quota sampling; interviewers select the respondents within their own network. One element remains: the location

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51 It can even be more complicated as the articles (Kendall, 2009; Sunden, 2009; Campbell, 2009) about how gender and sexuality influence research processes show.

of the interview. Following Hoyle et al. (2002) the research setting is chosen as similar to the real situation, being the home of the respondents. Although many consumers use mobile Internet in many locations, the home situation seems to have as little influence on the experiment as possible, because the respondents will feel "most comfortable in their normal environment" (Lazar et al., 2010; p. 265).

The mobile website[52]

The website of the pilot research has been used with a small number of adjustments. The basic structure of the site is kept simple; no effort has been made to adjust the site conform insights from web design and human computer interaction (e.g. Zhang et al., 1999; Culwin and Gaulkner, 2001; Maltby et al., 2003; Kuan et al., 2005; Gao and Koufaris, 2006; Lowry et al., 2006; Schaupp et al., 2006; Ayanso et al., 2010). The reason is that the focus is on the differences between the preferences before and after using the website, due to the satisfaction with this website. Whether the result evaluation is negative or positive is of no relevance. Keeping the mobile website as simple as possible seems to avoid any effects the design might have on different socio-demographic respondents groups. For example research shows design has a different impact on men and women (e.g. Huang, 2005; Simon and Peppas, 2005; see Whitley, 1997 for a meta-analysis on gender differences in computer related attitudes and behavior).

The question remains whether using the mobile website during the interview resembles the use of the channel in a natural environment? The respondents have used the mobile telephone of the interviewers, which is necessary to avoid potential costs for the respondents and is necessary because not all respondents have mobile access to the Internet. It differs however from the real situation in which they are (at least) familiar with the use of their mobile telephone. The role of the experiment and the effect it might have had on the results, is discussed in chapter 8. In this stage it is obvious that an experiment by definition has a negative influence on the ecological validity, but efforts have been made to keep this impact as low as possible.

4.5   Statistical analyses: the level of the variables

Statistical procedures can be distinguished in parametric and non-parametric tests. In general it can be stated that parametric tests are preferred as they give the researcher more opportunities in analyzing the data (e.g. Perreault and Young, 1980; Vaughan, 2001). However if "you use a parametric test when your data are not parametric then the results are likely to be inaccurate" (Field, 2005; p. 63). This means the use of the tests has an influence on both the internal validity and the external validity.

Therefore before using parametric tests first certain assumptions about the data have to be confirmed: the interval level of the variables, testing whether the distribution is normal, the independence of data from different participants and the assumption of homogeneity of variance (e.g. Churchill, 1999; Rayner and Best, 2000; Field, 2005; Brace et al., 2009). The results of these tests decide whether parametric or non-parametric tests can be used.

First the questionnaire has to be reviewed on the level of the variables. Since Stevens' On the Theory of Scales of Measurement (1946) variables are usually classified in four levels of measurement (e.g. Blalock, 1960; Bagozzi, 1994; Pfleeger et al., 1997; Vaughan, 2001; Hoyle et al., 2002; Argyrous, 2005; Field, 2005; Kemp and Grace, 2010; Lazar et al., 2010):

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52 The site has been 'redeveloped' by Thys ten Veldhuis, at that time a Bachelor student at the Hogeschool van Amsterdam, who also maintained the site during the fieldwork period.

- Nominal scales: this measurement classifies the cases in qualitatively different categories, which have no numerical meaning. In this survey the questions about gender, experience with mobile Internet and success with the mobile experiment fit into this category.
- Ordinal scales: this measurement classifies the cases in categories that can be ranked. In this research the questions about the channel preferences and the ranking of the attributes are within this category.
- Interval scales: this measurement classifies the cases in categories that can be ranked and is measured in intervals of equal distance between values on the scale. Questions that use the Likert-scales seem to fit into this category.
- Ratio scales: the measurement classifies the cases in categories that can be ranked and the intervals are measured in equal distances and there is also a true zero point. If age is asked without pre coded answer categories, it is measured on a ratio scale.

The relevance of these scales for statistical analyses is that "and this is of great concern to several of the sciences – the statistical manipulations that can legitimately be applied to empirical data depend upon the type of scale against which the data are ordered" (Stevens, 1946; p. 677). This means the questionnaire with the used answer categories has to be reviewed to decide what level of measurement has been used. The used questionnaire has been summarized in table 4.10 (see also appendix 3).

QUESTIONS	USED ANSWER CATEGORIES	SCALES
Experience with travel insurance	Often Sometimes No	Ordinal
Importance scores attributes	Scale from 1 (very unimportant) – 7 (very important)	Ordinal/Interval
Ranking attributes according to importance	Scale from 1 (most important) – 8 (most unimportant)	Ordinal
Ranking preference channels	Scale from 1 (most preferred) – 5 (least preferred)	Ordinal
Evaluation of the channels on the attributes	Scale from 1 (does not apply at all) – 7 (does apply very much)	Ordinal/Interval
Use of mobile Internet	never seldom sometimes often very often	Ordinal
Successful with mobile experiment	yes no	Nominal
Time used for experiment	less than a minute 1- 2 minutes 2 – 3 minutes 3 – 4 minutes 4 – 5 minutes 5 minutes or more	Ordinal/(Interval)
General satisfaction with mobile Internet	Scale from 1 (very dissatisfied) to 7 (very satisfied)	Ordinal/Interval

Satisfaction with mobile Internet per attribute	Scale from 1 (much worse than expected to 7 (much better than expected	Ordinal/Interval
Importance scores attributes	Scale from 1 (very unimportant) – 7 (very important)	Ordinal/Interval
Ranking attributes according to importance	Scale from 1 (most important) – 8 (most unimportant)	Ordinal
Ranking preference channels	Scale from 1 (most preferred) – 5 (least preferred)	Ordinal
Gender	Male Female	Nominal
Urbanization grade	< 20,000 inhabitants 20,000 – 100,000 inhabitants 100,000 and more inhabitants	Ordinal

Table 4.10 Level of measurement of the variables

It is obvious that the questions about ranking the channels and ranking the attributes are on an ordinal level (e.g. Churchill, 1999; Horsky and Nelson, 2006; Wilson, 2006); the difference between rank 4 and 5 is not by definition the same as the difference between rank 2 and 3. Respondents are willing and able to provide preference orders, but have difficulty in answering how much they prefer the alternatives (Perreault and Young, 1980).

The variables that measure importance scores, evaluation of the channels on the attributes and the satisfaction with the experiment are based on 7-point Likert-type scales that give an appearance of interval/ratio data and are often treated in that way (Hofacker, 1984), although Likert-type measures are assessed by using ordinal level categories, no matter what point scales are used (Singh et al., 1990; also Gibbons, 1992, 1993). Argyrous (2005; p. 344) warns:

> "This might tempt us to calculate the mean in order to compare two samples that have been measured on this scale. This is, strictly speaking, not a correct procedure. Unfortunately, calculating a mean on essentially ordinal data is not an infrequent occurrence. Market research companies do this as a standard procedure when describing survey data"

The assumption of equal distance between the response categories has been called "often unrealistic in practice" (Dittrich et al., 2007; p. 4), and referring to satisfaction scores it has been stated that "to perform a simple regression would produce biased results" (Dell'Olio et al., 2010; p. 389). At least "it is difficult to say whether it yields interval or ordinal level measurement" (Eagly and Chaiken, 1993; p. 55). Some authors (e.g. Chang and Yang, 2008; Wünderlich, 2009; Bentler, 2010; Lazar et al., 2010; Bassi, 2011) treat these Likert scales as ordinal scales, others use it as an interval scale (e.g. Churchill, 1999; Wilson, 2006) and some argue that they have "approximately interval properties" (Coote, 2011; p. 1296). The debate has started since Stevens' article and still continues (e.g. Lord, 1953; Gaito, 1980; Townsend and Ashby, 1984; Michell, 1986; Knapp, 1990; Velleman and Wilkinson, 1993; Norman, 2010). This makes it difficult to take a position in this discussion. On the one hand there are several convincing arguments for treating Likert scales on an ordinal level and therefore using non-parametric statistical tests. On the other hand the weighted additive and the simple additive model use the scores of the Likert scales to calculate a total score that represents the preferences. These calculations can only have meaning if the scales are on an interval level. Therefore in multi attribute attitude models it is assumed (given the formula) that values are measured on an interval scale (Horsky and Rao, 1984). This might be related to an observation of Kemp and Grace

(2010) that texts "on research methods sometimes summarize this debate by suggesting that if one adopts strict criteria, psychological measures often attain only ordinal status but that little practical damage is done by treating them as if they were interval scales" (p. 399). The authors warn however "Whether such practice is justified remains an open question and one with important implications for psychology as a scientific discipline" (p. 399).

To be able to use parametric tests the second assumption - that the distribution is normal – has to be verified. According to some (Gaito, 1980) this is the only relevant assumption : "If the data follow a normal distribution, then the data would be of interval scale nature" (p. 565). The Kolmogorov-Smirnov test whether the distribution is normal has been used (cf. McAlister, 1979; Churchill, 1999; Field, 2005); the test "is arguably the most well-known test for normality" (Drezner et al., 2010; p. 694) and the tests "are arguably the most common used nonparametric tests to see whether the empirical distribution calculated from a sample is from a particular theoretical distribution (Goldman et al., 2008; p. 369). Based on the total sample for every variable the null hypothesis, assuming a normal distribution, has to be rejected at the 0.05 significance level.

This means no position in the debate about the level of the variables is necessary. The statistical analyses will be based on non-parametric tests as non-parametric tests are more powerful than parametric tests if the assumptions about the data are not valid (Rayner and Best, 2001). The assumption that much information in the sample is not used with these tests has been doubted:

> "Although at first glance most nonparametric procedures seem to sacrifice too much of the basic information in the samples, theoretical investigations have shown that this is not the case. More often than not, the nonparametric procedures are only slightly less efficient than their normal theory competitors when the underlying populations are normal (the home court of normal theory methods), and they can be mildly and widely more efficient than these competitors when the underlying populations are not normal" (Hollander and Wolfe, 1973; p. 1).

In a number of tables the mean scores will be presented for convenience purposes, but all significance tests are based on non-parametric tests. These tests are used to verify whether differences between groups exist. This might be related to socio-demographic characteristics (for instance: do men and women have different channel preferences) and it might be related to the experiment (for instance: is there a difference in the ranking of the channels before and after conducting the experiment). The choice of the statistical tests is based on Vaughan's (2001; p. 158) road map for finding the correct statistical test:
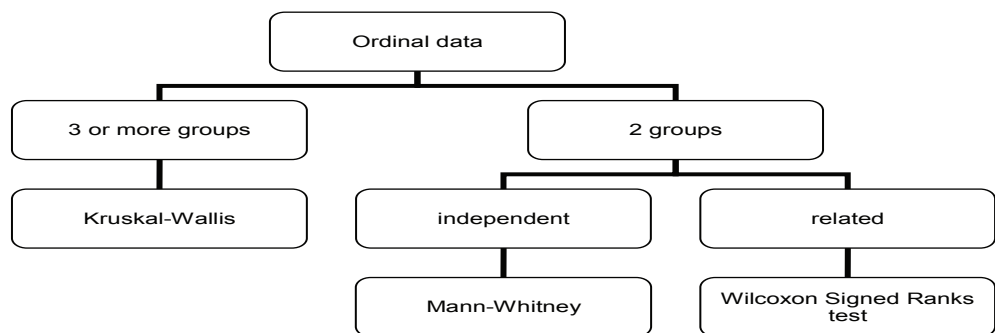
Illustration 4.1 Roadmap of statistical tests (Vaughan, 2001)

Using these tests, based on the number of groups and the relation between the groups, has been proposed in numerous other publications (e.g. Mosteller and Rourke, 1973; Forrest and Andersen, 1986; Svensson, 2001; Argyrous, 2005; Field, 2005; Agresti and Finlay, 2009; Brace et al., 2009; Lazar et al., 2010) and is followed in this research as well. This means that if independent groups are compared the Mann-Whitney or the Kruskal-Wallis test will be used. Examples of independent groups are analyses based on gender (two groups) or based on education (three groups). Related groups involve all the analyses with the scores before and after the experiment.

In table 4.11 the conditions and hypotheses as formulated in chapter 4 are presented in the first column. In the second column the desired result of the analysis is mentioned. The third column shows the used statistical analyses. The simplest statistics are the means and the percentages. For instance the means of the importance scores, of the ranking of the channels and the scores of the attributes per channel; the percentages of the most preferred channel and the percentage of respondents that mentions the attribute as most important. These means and percentages are not used to determine statistical significance; they are only meant to provide an adequate insight in the results. To confirm statistical significance between groups the Kruskal-Willis test (for three or more groups), the Mann Whitney (for two groups) and the Wilcoxon Signed Rank(s) (for two related groups) tests will be used.

RESEARCH TOPICS	OBJECTIVE OF THE ANALYSIS	USED STATISTICAL TESTS
The importance scores of the attributes are high.	Confirm that the attributes are relevant, which is shown with high importance scores	Mean of the importance scores; percentages
Respondents have a channel choice set that contains the relevant channels with a different intention to use.	Confirm that the consumers are able to rank the channels according to their preference	Mean of the ranking; percentages
Respondents are able to evaluate the channels on their attributes and give meaningful scores to the channels.	Confirm that consumers are able to review the channels and show that these reviews are based on common sense	Mean of the attributes per channel
External variables (e.g. socio-demographic characteristics, experience of the consumer) are of influence on the importance scores and evaluation of the channels.	Confirm that there is a difference between several consumer groups	Comparison between two groups (gender, experience) with Mann Whitney test; comparison between three and more groups (age, education) based on the Kruskal-Wallis test
The weighting additive and the simple additive model predict the preference ranking of the channels comparable.	Determine the percentages of the right predicted choices	Application of the formulas for the models
A positive or negative experience with the use of the mobile Internet will lead to a change in the channel preference choice set caused by a different score for the mobile Internet channel.	Confirm a part of the model by showing that there is a difference between the two user groups	Comparison between two groups based on Wilcoxon signed rank test

The attributes that change after the use of the mobile Internet are the attributes on which the mobile Internet either scores low (negative experience) or scores high (positive experience).	Confirm a part of the model by showing that positive and negative experiences lead to different evaluations	Comparison between two groups based on Wilcoxon signed rank test
The level of experience with mobile Internet will influence the (dis)conformation of experience.	Confirm a part of the model by showing that there is a difference between the two groups	Comparison between two groups based on Wilcoxon signed rank test
A change in the channel choice set is caused by a change in the importance of the attributes.	Prove the model	Comparison between two groups based on Wilcoxon signed rank test
A change in the channel choice set is caused by a change in the evaluation of the mobile Internet channel.	Prove the model	Comparison between two groups based on Wilcoxon signed rank test

Table 4.11 Research topics and statistical analysis

4.6   Conclusions

In this chapter a number of choices regarding the survey framework has been made. These choices are related to the internal, external and ecological validity of the research. The decisions have been partly based on other research and partly based on the specific requirements of this study. The fieldwork will be conducted by means of face-to-face interviews, where a non probability quota sample will be used. The quotas are based on the literature and feasibility. Gender, age and educational level are three variables that are used as quota; the sample size is 300 respondents. Respondents will answer first a number of questions about the channels, then conduct the experiment on the mobile telephone provided by the interviewer, and finally answer again a number of questions about the channels. The necessary control group will answer the questions without conducting the experiment. The statistical analyses will be based on non parametric tests as the debate about the measurement level of the variables gives not a clear answer and the distribution of the variables is not normal.

"Data analysis is fundamentally like detective work. Potential answers to many interesting questions lie hidden in the set of data."

Hoyle et al., 2002; p. 436

CHAPTER 5   TESTING THE BASIC ASSUMPTIONS

5.0   Abstract

The general results make clear that the formulated conditions are met: the importance scores of the attributes show that the for this research chosen attributes are important; respondents have a preference ranking for channels and therewith have a channel choice set and respondents are able to evaluate the channels on the attributes. The Internet is the most popular channel. Conducting the experiment with the mobile Internet channel leads to a satisfaction score of 4.75 and two third of the respondents evaluates the channel as better than expected.

5.1   Introduction

As the research framework has been developed, it is possible to answer the third sub question:

- *Can the model be confirmed empirically?*

The test of the model is done in two stages. In this chapter the first part of the model will be tested, the conditions. These conditions are the basic assumptions that refer to the model. In chapter 6 the second part of the model will be tested.
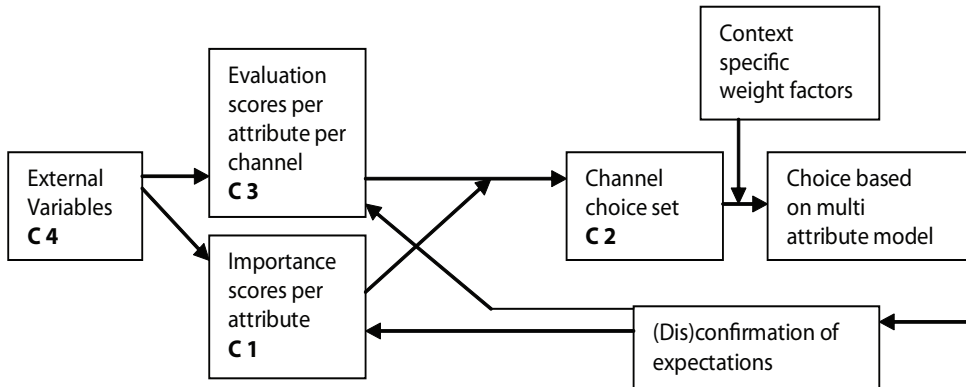
Figure 5.1 The multichannel dynamic model

- *C(ondition) 1: The importance scores of the attributes are high.*
- *C(ondition) 2: Respondents have a channel choice set that contains the relevant channels with a different intention to use.*
- *C(ondition) 3: Respondents are able to evaluate the channels on their attributes and give meaningful scores to the channels.*
- *C(ondition) 4: External variables (e.g. socio-demographic characteristics, experience of the consumer) are of influence on the importance scores and evaluation of the channels.*

Before discussing the outcomes regarding the fulfilment of these conditions, the actual sample and the course of the fieldwork will be reviewed.

5.2   The sample and the fieldwork

Table 5.1 shows the difference between the actual sample versus the ideal quota sample.

educational level	15-25 years		25-35 years		35-45 years		45-55 years		55-65 years		65-75 years	
	men	women	men	women	men	women	men	women	men	women	men	women
low	+5	+1	+5	+1	-4	-3	-2	-5	-5	-8	-3	-8
middle	+3	+4	+7	+2	-7	-8	-3	-3	-6	-4	-3	-4
high	+3	+4	+10	+7	+5	-2	+2	+11	+2	+5	0	+1

Table 5.1 Actual versus ideal quota sample

There are differences between the quota and the actual numbers. These differences are due to the relatively large number of interviewers that have been involved, which makes it difficult to get exactly the right quota. A second reason is the difficulty in interviewing respondents of 55 years and older with a low level education and (to a lesser extent) middle level education. Overall there is a large over representation of respondents with a high level education and the age group 25 – 35 years. This is due to the large number of interviewers in the age group 20 – 25 years old, all of them at least with middle level education. As they have been instructed to interview within their own network the bias towards this educational level and age group is explainable. This means that some caution is necessary when discussing certain socio-demographic groups. For instance: the group with a low educational level includes a relatively large number of young respondents; it can be doubted whether old respondents with a low educational level behave in a similar way.

The fieldwork has been conducted between May 2010 and October 2010. This relatively long period is caused by the chosen method: face-to-face interviews using a quota sample. This has meant a large number of interviewers has been involved as the recruiting of the respondents had to be within the own network of the interviewer (given the length of the questionnaire and the complexity of the research). This has limited the total number of interviews conducted per interviewer. A separate reason is the fact that the fieldwork period included the summer holidays.

A total of 310 face-to-face interviews have been conducted. The control of these interviews has revealed that not all questionnaires are completed. In some cases (14) this is caused by interviewer error; these questionnaires have been deleted. In some cases however this is caused by the fact that respondents have not answered all questions. For instance not all respondents have conducted the ranking of the attributes; not all respondents have evaluated the channels on all the attributes. Missing observations are "the rule rather than the exception" (Kamakura and Wedel, 2000; p 490) and three procedures are usually used (Kamakura and Wedel, 2000; Allison, 2002; Field, 2005) [53]:

  • list wise completion or complete-case analysis: the questionnaires that are incomplete are deleted and the calculations of the scores of the variables are based on the complete questionnaires;

53 Many more sophisticated imputation alternatives (compared to mean replacement) have been developed (e.g. Little and Rubin, 1987; Little, 1988; Kamakura and Wedel, 2000; Allison, 2002; Gelman and Hill, 2007), but imputation procedures are not a solution in this survey as the analyses are on an individual level and the statistical analyses do not require all the data.

- mean replacement: the missing values on a variable are substituted with the mean for that variable and the calculations are based on all the questionnaires, including the imputed means;
- pair wise deletion or available case analysis: all questionnaires are included, but the calculations of the variables are based on the given answers; respondents without a score for that variable are excluded from the analysis of that specific variable.

The choice of the procedure depends on the advantages and disadvantages of the procedure in relation to this specific survey. List wise completion is a simple solution that has the disadvantage of reducing the sample size. Another issue is related to the question what causes the missing data: list wise deletion can "reduce the validity of interferences when the data are not missing at random" (Ball, 2003; p. 374). The fact that respondents have not answered certain questions might be correlated with the dependent variable (channel preference). It can be argued that if respondents are not able to evaluate the channels, this is caused by a lack of knowledge of the channels. If they have difficulty in ranking attributes, this might be caused by the fact that they find all of them very important. Not answering the question is not because they misunderstand the questions or because the interviewer has made a mistake. This kind of respondent might represent a certain group of consumers with specific characteristics and a part of the population as a whole. Deleting them might result in a bias towards respondents with more knowledge about channels in general or (mobile) Internet in specific. In table 5.2 the first choice of the respondents gives some indication: respondents that did not answer all questions score higher on the telephone and written communication channel than the respondents that did answer all questions and score less on the Internet channel.

Channel first choice	Not complete questionnaire	Complete questionnaire
Face-to-face	20%	19%
Telephone	26%	12%
Internet	46%	65%
Mobile Internet	3%	2%
Written communication	9%	2%

Table 5.2 Channel preference and complete/not complete questionnaires

This indicates that this method might lead to a bias of the results. Replacement of the missing values by the means is, given the missing data, hardly possible and seems to complicate the analysis unnecessarily. The mean of a ranking is hardly a substitute for a missing value. This leaves the third method, to include the "incomplete" questionnaires in the results and choose for the pair wise deletion. Pair wise deletion has disadvantages. One is related to small samples (Allison, 2002) and seems of no importance in this survey. The other is the fact that the sample sizes are different (Little and Rubin, 1987), which might cause some problems in certain statistical tests. As these tests are not used in the analyses, the choice has been made to opt for pair wise deletion. In total 296 interviews have been included. To be included the respondents have to answer the questions on the ranking of the channels and the importance scores of the attributes. If they have not been able to rank the attributes or evaluate (all of) the channels, they have still been included. Of the 296 respondents 14 have not been able to rank (all of) the attributes and 24 respondents have not been able to evaluate (all of) the channels. A total of 212 respondents have conducted the mobile Internet experiment.

5.3   The model in general: basic assumptions

In figure 5.2 the shaded areas refer to the conditions that have to be confirmed. First it is assumed, based on the literature review, the qualitative laddering research and the pilot interviews that all eight attributes are important in choosing a channel for purchasing travel insurance. This means that the importance scores are well above the average (4) and there are no large differences between the attributes. Secondly respondents have a different preference for the channels; they prefer some channels to others. This leads to a ranking of the channels. Thirdly the evaluation of the channels has to be in line with common sense. This means that channels score high on attributes on which they have an advantage compared to the other channels. For instance: on the attribute "when I want" the Internet should score relatively high and the face-to-face channel should score relatively low. Finally it has to be determined that differences in importance scores and differences in the evaluation of the channels are caused in the model by external variables.
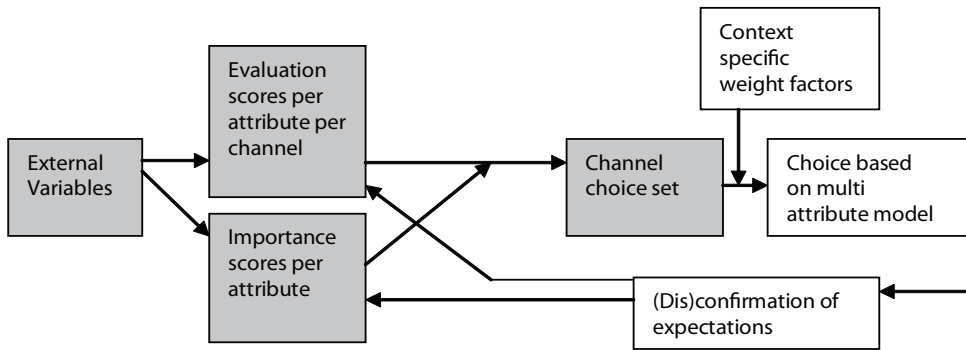
Figure 5.2 The multichannel dynamic model

- *Condition 1: the importance scores of the attributes are high.*

In table 5.3 the importance scores for the attributes, the mean of the ranks and the percentage respondents that has selected the attribute as the most important attribute are presented.

n=296	Mean of importance score (the higher, the more important, score between 1 and 7)	Mean of rank score (the lower the more important, score between 1 and 8)	Percentage that mentions attribute as most important (n=282)
Getting good information	5.97	3.54	23%
Making the right choice	5.80	4.42	10%
Easy	5.84	4.35	10%
Spending as little time as possible	5.59	4.96	12%
When I want	5.71	4.68	10%
Easy communicating	5.68	5.21	4%

Having control	5.75	4.59	10%
Safety personal information	5.80	4.16	21%

Table 5.3 Importance scores of the attributes

The importance scores are all high (above 5.5 on a 7 point scale) and the differences between the scores for the attributes are relatively low, therewith confirming that the selected attributes are important. The small differences between the importance scores might have consequences for the predictive power of the multi attribute attitude model: if the differences are small, the model resembles the (more simple) adding model.

The relation between the mean of the importance score and the mean of the rank score is evident: getting good information scores highest on mean importance and lowest on mean rank; the opposite does not apply for spending as little time as possible, but with a second lowest ranking score the correlation is also obvious. Getting good information scores highest on the percentage that mentions the attribute as the most important; surprisingly safety of personal information scores second. It might be assumed that risk avoidance is most important when faced with an unknown (for the purpose) channel; being for most consumers a minimum demand that should be at least fulfilled.

- *Condition 2: Respondents have a channel choice set that contains the relevant channels with a different intention to use*

Respondents have been asked to rank their channels according to their preference from 1 to 5. It is possible for respondents to give channels the same ranking scores; the ranking the respondents gave to the channels has been used. Table 5.4 gives the mean of the ranking of the channels. The lower the score, the more popular the channel is. A score for the Internet of 1.70 means that the respondents rank this channel on an average as their first or second channel.

n=296	Mean of the ranking (score between 1 and 5)	Percentage that mentions channel as first choice	Percentage that mentions channel as second choice	Percentage that mentions channel as last choice
Face-to-face	3.09	19%	14%	17%
Telephone	2.51	14%	42%	4%
Internet	1.70	63%	18%	3%
Mobile Internet	3.77	2%	19%	37%
Written communication	3.96	3%	7%	40%

Table 5.4 Ranking of the channels

The Internet is by far the most popular channel; almost two out of three respondents name this channel as their first choice. The correlation between the mean of the ranking and the percentage first choice is not high (except for the Internet channel). Compared with the telephone channel the face-to-face scores lower on the ranking but higher on first choice; this also applies to mobile Internet and written communication. The explanation is in the percentages second choice, in which telephone and mobile Internet score higher than the other channels. The telephone is seen as a suitable alternative for a large number of respondents, no matter what channel they prefer first.

The same argument can be found when looking at the fifth choice column. Telephone and Internet score lowest, face-to-face scores in the middle.

- *Condition 3: Respondents are able to evaluate the channels on their attributes and give meaningful scores to the channels*

The opinion about the channels is presented in table 5.5; the means of the score per channel and the relative score of that channel (compared to the other channels) are mentioned. The Internet scores high on easy and when I want and relatively low on easy communicating and safety personal information. These are the attributes on which the face-to-face channel scores highest; results that are in accordance with common sense (and the media richness theory). The telephone channel scores relatively high on easy communicating; the other attributes score on average. The mobile Internet scores high on the time issues (little time as possible, when I want). The written communication channel scores lowest on most of the attributes. The scores are in line with what one could expect, for instance face-to-face scoring low on spending as little time as possible and scoring high on safety personal information, the Internet channel scoring high on when I want (6.52!). This indicates that the respondents are able to classify the channels properly.

n= 272	Face-to-face	Telephone	Internet	Mobile Internet	Written
Getting good information	5.84 (1)	5.17 (3)	5.62(2)	4.58 (4)	4.33 (5)
Making the right choice	5.46 (2)	4.87 (3)	5.82 (1)	4.75 (4)	4.60 (5)
Easy	5.31 (2)	5.13 (3)	5.92 (1)	4.67 (4)	4.01 (5)
Spending as little time as possible	3.77 (5)	4.87 (3)	5.93 (1)	4.92 (2)	3.79 (4)
When I want	3.73 (5)	4.81 (4)	6.52 (1)	5.77 (2)	5.10 (3)
Easy communicating	6.04 (1)	5.53 (2)	4.74 (3)	4.21 (4)	3.50 (5)
Having control	5.40 (2)	4.89 (3)	5.58 (1)	4.63 (4)	4.50 (5)
Safety personal information	5.53 (1)	4.68 (4)	4.94 (2)	4.13 (5)	4.77(3)

Table 5.5 Evaluation of the channels on the attributes

Conducting the experiment results in the following (table 5.6) satisfaction scores. The satisfaction scores rank from 1 to 7; a score above 3.50 indicates a positive experience, a score below 3.50 indicating a negative experience.

n=212	Mean score (worse/better than expected)	Percentage that scores worse than expected	Percentage that scores better than expected
Getting good information	3.52	46%	27%
Making the right choice	3.99	35%	39%
Easy	4.56	23%	56%
Spending as little time as possible	4.48	26%	53%

When I want	5.42	5%	70%
Easy communicating	3.48	46%	25%
Having control	4.23	25%	43%
Safety personal information	3.67	38%	26%
OVERALL SATISFACTION (1 low – 7 high)	4.61	21%	62%

Table 5.6 Evaluation of the mobile Internet after the experiment

The mobile Internet channel surprises respondents positively on the attributes when I want, easy and spending as little time as possible. This leads to an overall satisfaction score of 4.61. On all attributes the mobile channel scores on an average at least neutral; easy communicating receives the lowest score with an average of 3.48. Reviewing the percentage that scores worse or better than expected gives a different insight. Almost half of the respondents is negative about getting good information and easy communication, therewith indicating that the neutral scores are not a correct reflection of the opinion on these attributes. The other attributes score comparable on the mean satisfaction and the worse/better than expected ratio. The same applies for the overall score: almost two third of the respondents has a positive satisfaction score.

- *Condition 4: External variables are of influence on the importance scores and evaluation of the channels: gender.*

In table 5.7 the importance scores of the attributes are given for men and women. There are many significant differences between men and women, but in general women score higher on the importance scores. Looking at the most important attribute several differences in importance can be noticed: women find getting good information, when I want and safety personal information more often the most important; men find spending as little time as possible and having control more important (at least they are more often mentioned as most important). This indicates a difference in orientation: women being more outcome oriented; men being more convenience oriented.

n=296	Mean of importance score		Significance (Mann-Whitney test; 95% confidence)	Percentage that mentions attribute as most important n=282	
	Male	Female		Male	Female
Getting good information	5.82	6.14	+	20%	28%
Making the right choice	5.71	5.90	-	10%	9%
Easy	5.72	5.98	+	10%	9%
Spending as little time as possible	5.49	5.70	-	15%	8%
When I want	5.62	5.81	-	8%	12%
Easy communicating	5.53	5.84	+	5%	3%
Having control	5.73	5.76	-	13%	7%

Safety personal information	5.63	6.00	+	20%	23%

Table 5.7 Importance scores of the attributes, gender

The differences in the popularity of the channels (see table 5.8) are only statistically (Mann-Whitney test; $p < 0.05$) significant for the mobile channel. Looking at the ranking percentages (first, second and so on) the chi-square test shows a significant difference for the telephone channel ($p < 0.05$). The 'second choices' reveal that women mention the face-to-face channel more than men (who opt more for Internet and mobile Internet).

n=296	Mean of the ranking		Percentage that mentions channel as first choice		Percentage that mentions channel as second choice	
	Male	Female	Male	Female	Male	Female
Face-to-face	3.08	3.11	22%	16%	9%	19%
Telephone	2.54	2.47	11%	17%	41%	42%
Internet	1.73	1.66	62%	63%	19%	16%
Mobile Internet	3.64	3.91*	2%	2%	23%	14%
Written communication	3.99	3.92	5%	1%	8%	7%

Table 5.8 Ranking of the channels, gender

The evaluation of the channels is summarized in table 5.9. Men are in general more positive about the Internet, women in general more positive about the mobile Internet. Women rate all channels lower on safety personal information than men do; the difference for the Internet channel is significant (Mann-Whitney test; $p < 0.05$). Women score significantly more positive for the mobile Internet channel on when I want and almost significantly higher on easy.

	Face-to-face		Telephone		Internet		Mobile Internet		Written	
	M	F	M	F	M	F	M	F	M	F
Getting good information	5.79	5.90	5.10	5.25	5.70	5.52	4.50	4.66	4.17	4.51
Making the right choice	5.38	5.54	4.84	4.90	5.79	5.85	4.59	4.94	4.26*	4.98*
Easy	5.21	5.42	5.21	5.05	5.88	5.97	4.46	4.91	3.83	4.21
Spending as little time as possible	3.80	3.75	4.88	4.85	6.04	5.80	4.81	5.06	3.74	3.85
When I want	3.81	3.65	4.88	4.73	6.50	6.55	5.54*	6.05*	4.83*	5.39*
Easy communicating	6.09	5.98	5.52	5.53	4.95*	4.50*	4.39	3.99	3.58	3.41

Having control	5.50	5.30	4.95	4.82	5.68	5.47	4.52	4.74	4.48	4.53
Safety personal information	5.54	5.52	4.77	4.57	5.18*	4.68*	4.23	4.01	4.83	4.70

Table 5.9 Evaluation of the channels on the attributes, gender

The satisfaction scores are also more or less similar (see table 5.10). A score of 3.5 means the mobile Internet scores as expected on the attribute. Some differences may be noticed. Men score more positive on getting good information, making the right choice and safety personal information; women score more positive on easy, when I want and spending as little time as possible. This is surprising as they score on their evaluation of the mobile Internet channel also higher. With other words: the expectations regarding the mobile channel of women are higher than the expectations of men and still their satisfaction is higher.

n=212	Mean score (worse/better than expected)		Percentage that scores better than expected	
	Male	Female	Male	Female
Getting good information	3.59	3.43	27%	28%
Making the right choice	4.09	3.86	40%	38%
Easy	4.46	4.67	52%	61%
Spending as little time as possible	4.39	4.59	48%	60%
When I want	5.38	5.46	66%	75%
Easy communicating	3.60	3.33	27%	22%
Having control	4.27	4.19	41%	44%
Safety personal information	3.75	3.58	24%	27%
OVERALL SATISFACTION (1 low – 7 high)	4.54	4.71	61%	63%

Table 5.10 Evaluation of the mobile Internet after the experiment, gender

Although the differences are statistically not significant it is interesting to note that men have higher scores on getting good information, making the right choice and safety personal information. These three attributes have the highest importance scores among women. This might indicate that women are more critical on these attributes.

- *Condition 4: External variables are of influence on the importance scores and evaluation of the channels: education.*

The differences between the importance scores per educational level show no significant statistical differences as can be seen in table 5.11, although some scores deserve attention. Lower educated respondents find getting good information and safety personal information the most important attributes; the higher educated have the highest score on easy. The percentages first mentioned show that the higher educated respondents care less about safety personal information; for the middle educated the highest score is for safety personal information.

n=296 and n= 282	Mean of importance score			Significance (Kruskal-Wallis test	Percentage that mentions attribute as most important		
Educational level	Low	Middle	High		Low	Middle	High
Getting good information	6.01	6.16	5.79	-	27%	22%	23%
Making the right choice	5.64	5.97	5.76	-	7%	8%	13%
Easy	5.93	5.76	5.85	-	10%	4%	14%
Spending as little time as possible	5.46	5.55	5.70	-	10%	13%	13%
When I want	5.53	5.79	5.76	-	8%	10%	11%
Easy communicating	5.71	5.61	5.70	-	5 %	7%	2%
Having control	5.74	5.72	5.77	-	10%	11%	10%
Safety personal information	6.07	5.86	5.60	-	26%	26%	14%

Table 5.11 Importance scores of the attributes, educational level

The ranking of the channels shows significant (Kruskal-Wallis test; p < 0.05) differences per educational level for the face-to-face and the telephone channel (table 5.12)[54]. Reviewing the first and second mentioned choices it becomes clear that the lower educated respondents have a relative preference for face-to-face and less for the Internet. The middle educated score high on the Internet as a first and as a second choice; for almost 90% it is either the first or second preferred channel. The higher educated score lower on the face-to-face channel and relatively high on the telephone channel.

n=296	Mean			Percentage first choice			Percentage second choice		
	Low	Middle	High	Low	Middle	High	Low	Middle	High
Face-to-face	2.79[8]*	2.99*	3.37*	32%	18%	12%	9%	19%	12%
Telephone	2.57*	2.68*	2.33*	7%	14%	16%	46%	31%	48%
Internet	2.01	1.58	1.59	57%	65%	65%	13%	24%	16%
Mobile Internet	3.61	3.87	3.79	3%	2%	2%	28%	16%	16%
Written communication	4.01	3.91	3.96	3%	1%	5%	5%	10%	7%

Table 5.12 Ranking of the channels, educational level

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54 An * in table 5.12 and the following tables in this chapter means: statistically significant Kruskal-Wallis test; p < 0.05.

Given these differences in the ranking of the channels it comes to no surprise that the evaluation of the channels is also different. Statistically (Kruskal-Wallis test; $p < 0.05$) significant differences are found for the face-to-face channel, the Internet channel and written communication. The lower educated are more positive than the other groups for the face-to-face channel on all aspects; statistically only significant for when I want and the safety of personal information. They also score significantly higher for the safety aspect of the Internet. The high score of the middle educated respondents for the Internet channel seems to be caused by the high score on the evaluation of getting good information and safety personal information; an explanation is difficult to give.

n=272	Face-to-face			Telephone			Internet			Mobile Internet			Written		
	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H
Getting good info	5.99	5.95	5.66	5.36	5.04	5.15	5.43	5.76	5.61	4.61	4.58	4.56	3.93*	4.74*	4.25*
Making the right choice	5.51	5.52	5.37	5.21	4.74	4.76	5.64	5.94	5.83	4.70	4.74	4.79	4.17	5.02	4.52
Easy	5.54	5.48	5.03	5.27	5.12	5.06	5.60	6.05	6.01	4.58	4.83	4.59	3.91	4.33	3.80
Spending as little time as possible	4.09	3.86	3.52	5.20	4.63	4.86	5.76	5.95	6.02	4.77	5.04	4.92	3.87	3.90	3.65
When I want	4.11*	3.92*	3.34*	5.21	4.82	4.56	6.46	6.54	6.55	5.72	5.92	5.68	4.99	5.32	4.98
Easy comm.	6.09	6.06	5.99	5.64	5.40	5.57	4.51	4.83	4.81	4.23	4.18	4.21	3.29	3.66	3.50
Having control	5.73	5.38	5.22	4.99	4.92	4.81	5.64	5.76	5.38	4.68	4.83	4.43	4.34	4.65	4.48
Safety personal info	5.79*	5.71*	5.23*	4.86	4.81	4.46	5.03*	5.35*	4.55*	4.17	4.39	3.88	4.77	4.95	4.62

Table 5.13 Evaluation of the channels on the attributes, educational level

The differences in the satisfaction scores are remarkable: the middle level educated respondents score highest on almost all attributes (except getting good information) and score highest in the overall satisfaction scores. This is not caused by a difference in experience with the mobile Internet: no significant correlation (chi-square, Kruskal-Wallis test; $p < 0.05$) is found between educational level and experience with the mobile Internet.

n=212	Mean score (worse/better than expected)			Percentage that scores better than expected		
	low	middle	high	low	middle	high
Getting good information	3.90*	3.61*	3.12*	38	33	13

Making the right choice	4.13	4.17	3.70	43	45	30
Easy	4.44*	4.96*	4.29*	51	71	47
Spending as little time as possible	4.35*	4.97*	4.14*	48	70	53
When I want	5.13	5.65	5.45	68	73	68
Easy communicating	3.65	3.67	3.16	30	29	16
Having control	4.11	4.46	4.12	43	51	36
Safety personal information	3.70	3.88	3.46	29	30	18
OVERALL SATISFACTION (1 low – 7 high)	4.59*	5.03*	4.25*	67	59	62

Table 5.14 Evaluation of the mobile Internet after the experiment, educational level

It is difficult to find an explanation for the relatively low scores of the higher educated. They have the lowest satisfaction scores on all attributes and the lowest overall satisfaction score. It seems to indicate that the higher educated are more critical as it cannot be explained by a difference in experience with the mobile Internet. An alternative explanation might be the correlation with experience with purchasing travel insurance. Of the lower educated respondents 58% has never bought travel insurance; of the middle level educated 34% has no experience, dropping to 20% for the higher educated. It can be argued that because the higher educated have more experience with buying travel insurance, they evaluate the channel more critical on its use for this purpose as they know how to evaluate the attributes. The respondent groups with less experience evaluate the channel more on its general use.

- *Condition 4: External variables are of influence on the importance scores and evaluation of the channels: age.*

Young people score lower than the other age groups on the importance scores of most attributes. This might be caused by a lack of experience with purchasing travel insurance as there is a correlation between age and the frequency of purchasing travel insurance, with young respondents having less experience. A lack of experience might result in an under- or overestimation of the importance of the attributes, in this case an underestimation of the importance scores. The oldest age group (45+) scores relatively high on making the right choice and easy communicating, while surprisingly scoring the lowest on safety personal information. This is more evident when looking at the percentages of the most important attribute: the youngest group scores highest on safety, the oldest group the lowest. This is counter intuitive; an explanation might be again the (lack of) experience with purchasing travel insurance.

n=296 and n=272	Mean of importance score	Significance (Kruskal-Wallis test; $p < 0.05$)	Percentage that mentions attribute as most important

	< 25 years	25-45 years	45 years and older		< 25 years	25-45 years	45 years and older
Getting good information	5.79	6.04	6.00	-	16%	24%	28%
Making the right choice	5.40*	5.88*	5,96*	+	12%	7%	11%
Easy	5.61	5.80	6.03	-	8%	9%	11%
Spending as little time as possible	5.46	5.57	5.69	-	15%	15%	7%
When I want	5.36	5.82	5.81	-	8%	7%	15%
Easy communicating	5.34*	5.62*	5.94*	+	8%	3%	4%
Having control	5.57	5.77	5.83	-	8%	13%	9%
Safety personal information	5.75	6.04	5.57	-	27%	22%	16%

Table 5.15 Importance scores of the attributes, age

The differences in the channel ranking are for four channels significant (Kruskal-Wallis test; $p < 0.05$). The telephone and written communication score relatively high for the oldest age group; the Internet for the youngest age group and surprisingly the mobile Internet for the middle group. This is explained by the experience with the mobile Internet. Of the young respondents 66% has no experience; of the older respondents (45+) 85% has no experience and of the middle age group (25-45) 59% has no experience (statistically significant, chi square, $p < 0.05$).

n=296	Mean of the ranking			Percentage that mentions channel as first choice		
	< 25 years	25-45 years	45 years and older	< 25 years	25-45 years	45 years and older
Face-to-face	3.13	3.02	3.15	12%	21%	21%
Telephone	2.61*	2.60*	2.34*	12%	10%	18%
Internet	1.46*	1.65*	1.89*	72%	65%	55%
Mobile Internet	3.76*	3.51*	4.06*	2%	3%	1%
Written communication	4.01*	4.21*	3.63*	3%	1%	6%

Table 5.16 Ranking of the channels, age

The evaluation of the channels (table 5.17) differs for the age groups. The youngest group gives high scores to the Internet and the mobile Internet channel on easy communicating, probably showing the effect of experiencing new technology early in life. The oldest group scores high on the written channel; probably also due to experience, and high on the safety of the telephone channel.

n=272	Face-to-face			Telephone			Internet			Mobile Internet			Written		
	< 25 years	25-45 years	45 years and older	< 25 years	25-45 years	45 years and older	< 25 years	25-45 years	45 years and older	< 25 years	25-45 years	45 years and older	< 25 years	25-45 years	45 years and older
Getting good info	5.92	5.81	5.82	5.19*	5.41*	4.89*	5.48	5.83	5.46	4.37	4.77	4.49	3.98	4.34	4.55
Making the right choice	5.34	5.35	5.65	4.98	4.84	4.83	5.69	5.87	5.85	4.66	4.89	4.65	4.45	4.42	4.90
Easy	5.30	5.12	5.53	5.20	5.13	5.09	5.78	6.00	5.92	4.77	4.69	4.57	3.69	3.99	4.24
Spen-ding as little time	3.78	3.87	3.67	4.70	5.04	4.78	6.00	5.96	5.85	5.16	4.97	4.71	3.80	3.86	3.71
When I want	3.77	3.64	3.81	4.91	4.62	4.97	6.66	6.52	6.44	6.11	5.77	5.56	4.97*	4.85*	5.46*
Easy comm.	6.09	5.95	6.11	5.56	5.60	5.43	4.58*	5.11*	4.43*	4.06*	4.62*	3.83*	3.36	3.53	3.55
Having control	5.72	5.23	5.39	4.98	5.09	4.61	5.61	5.78	5.33	4.72	4.75	4.43	4.39	4.43	4.65
Safety info	5.53	5.49	5.58	4.98*	4.89*	4.24*	5.25	5.06	4.61	4.39	4.18	3.90	4.94	4.77	4.65

Table 5.17 Evaluation of the channels on the attributes, age

As can be seen in table 5.18 the satisfaction scores differ significantly (Kruskal-Wallis test, $p < 0.05$) on a majority of the number of attributes and the overall satisfaction score, with the youngest age group being in general more satisfied. All groups are most satisfied on the attributes easy, spending as little time and when I want, the three convenience aspects of the mobile channel.

The group with the most experience with the mobile Internet, 25 – 45 years, scores highest on those attributes that are specifically related to the experiment: getting good information, making the right choice, easy communicating, having control and safety personal information. On the general attributes (easy, little time, when I want) the young respondents score the highest. This indicates that the oldest respondents are the least 'surprised'.

n=212	Mean score (worse/better than expected)			Percentage that scores better than expected		
	< 25 years	25 – 45 years	45 years and older	< 25 years	25 – 45 years	45 years and older
Getting good information	3.56*	3.86*	3.14*	28	37	12
Making the right choice	4.19*	4.28*	3.54*	46	47	25
Easy	5.00	4.47	4.33	63	53	55

Spending as little time as possible	5.19*	4.40*	4.07*	65	49	50
When I want	5.48	5.37	5.42	69	69	71
Easy communicating	3.41*	3.86*	3.13*	17	32	22
Having control	4.31	4.50	3.89	45	49	36
Safety personal information	3.87*	3.94*	3.26*	30	32	16
OVERALL SATISFACTION (1 low – 7 high)	5.22*	4.68*	4.11*	76	62	51

Table 5.18 Evaluation of the mobile Internet after the experiment, age

- *Condition 4: External variables are of influence on the importance scores and evaluation of the channels: experience mobile Internet.*

The respondents have been recoded according to their experience with mobile Internet. Two groups are distinguished: respondents with no experience and respondent with experience, no matter how often they use the mobile Internet. Table 5.19 shows the importance scores for both groups.

n=296	Mean of importance score		Significance (Kruskal-Wallis test; $p < 0.05$)	Percentage that mentions attribute as most important	
	no experience	experience		no experience	experience
Getting good information	5.99	5.92	-	24	22
Making the right choice	5.82	5.76	-	9	11
Easy	5.78	5.99	-	8	13
Spending as little time as possible	5.55	5.69	-	11	15
When I want	5.64	5.87	-	9	12
Easy communicating	5.72	5.56	-	6	1
Having control	5.76	5.72	-	12	7
Safety personal information	5.78	5.85	-	22	19

Table 5.19 Importance scores of the attributes, experience mobile Internet

Although the difference between the score on easy is rather large, none of the differences are statistically significant. The difference in ranking is for all channels significantly (Mann-Whitney test; $p < 0.05$) different. The respondents with experience with the mobile Internet channel score higher on the Internet and the mobile Internet channel and lower on all other channels. From the percentages that mention the channel as first choice it can be concluded that the mobile Internet scores for the respondents with mobile experience high as a second or third choice channel as it hardly scores as a first channel and still has an overall ranking of third channel.

n=296	Mean of the ranking (the lower, the more popular, score between 1 and 5)		Percentage that mentions channel as first choice	
	no experience	experience	no experience	experience
Face-to-face	2.92**	3.51**	23	9
Telephone	2.41**	2.74**	15	10
Internet	1.77**	1.53**	57	76
Mobile Internet	4.06**	3.08**	2	2
Written communication	3.88**	4.13**	3	2

Table 5.20 Ranking of the channels, experience mobile Internet[55]

Given the different ranking of the channels, it comes as no surprise that there are also a number of statistical significant (Mann-Whitney test; p < 0.05) differences in the evaluation scores. In general the respondents with experience with the mobile Internet give the mobile Internet channel higher scores on attributes one has to experience: easy, easy communicating and getting good information. The respondents without experience are more positive about the traditional channels.

n=272	Face-to-face		Telephone		Internet		Mobile Internet		Written	
	Experience		Experience		Experience		Experience		Experience	
	yes	no	yes	no	yes	no	yes	no	yes	no
Getting good info	5.98	5.51	5.20	5.08	5.61	5.63	4.43**	4.90**	4.49**	3.96**
Making the right choice	5.73**	4.83**	4.95	4.69	5.83	5.80	4.61	5.06	4.70	4.39
Easy	5.50**	4.88**	5.23	4.92	5.83**	6.12**	4.51**	5.02**	4.15	3.69
Spending as little time as possible	3.84	3.63	4.97	4.64	5.89	6.01	4.78	5.24	3.88	3.58
When I want	3.83	3.51	4.94**	4.52**	6.55	6.46	5.71	5.93	5.27**	4.70**
Easy comm.	6.20	5.68	5.60	5.37	4.69	4.85	4.06**	4.52**	3.56	3.36
Having control	5.49	5.20	4.94	4.79	5.62	5.48	4.60	4.68	4.59	4.30
Safety personal info	5.62	5.33	4.71	4.61	4.87	5.10	4.03	4.35	4.79	4.71

Table 5.21 Evaluation of the channels on the attributes, experience mobile Internet

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55 In this and the following two tables ** means statistically significant, Mann-Whitney test; p <0.05

The satisfaction scores (table 5.22) of the experienced respondents are overall slightly higher than the non experienced group, but not statistically significant, except for the overall satisfaction score. The non experienced respondents score higher on the attribute when I want, which is not surprising as the experienced group knows what to expect. The overall high scores of the experienced group are not what one expects as that group should know in general what they will get when using the mobile Internet. An explanation might be that the group with experience with mobile Internet has a different, more positive, notion towards new technology in general.

n=212	Mean score (worse/better than expected)		Percentage that scores better than expected	
	no experience	experience	no experience	experience
Getting good information	3.46	3.67	28	27
Making the right choice	3.87	4.28	36	45
Easy	4.47	4.77	55	60
Spending as little time as possible	4.34	4.83	50	62
When I want	5.43	5.38	71	67
Easy communicating	3.39	3.70	24	27
Having control	4.18	4.37	43	43
Safety personal information	3.59	3.88	26	25
OVERALL SATISFACTION (1 low – 7 high)	4.48**	4.93**	57	73

Table 5.22 Evaluation of the mobile Internet after the experiment, experience mobile Internet

5.4   Conclusions

The results of the fieldwork show that the basic assumptions of the model are met. The attributes score high on the importance scores; respondents do have a preference ranking for channels and a channel choice set. The respondents are also able to evaluate the channels on the attributes, with the Internet as the most popular channel. An analysis based on the (according to the literature) relevant background variables shows some interesting differences between different groups that might be of interest when evaluating the model:

• In evaluating channels women are more outcome oriented; men are more convenience oriented.
• The evaluation of the channels shows that men are more positive about the Internet; women are more positive about the mobile Internet.
• Women are less positive than men about safety personal information for all channels.
• Evaluation of the mobile Internet experiment shows no significant differences between men and women.
• Although for all groups the Internet is the most popular channel, the face-to-face channel is relatively popular among the lowest educated, the telephone channel relatively popular among the highest educated.
• The middle educated score highest on the satisfaction scores with the experiment; the

highest educated score lowest. The higher educated might be more critical in general or they might be more critical because they have more experience with buying travel insurance.
• The several age groups score differently on the ranking of the channels. The Internet is relatively popular among the youngest group, the mobile Internet among the middle age group and the face-to-face channel among the oldest age group.
• The group aged 25 – 45 years has most experience with the mobile Internet.

As the basic conditions of the model are met, the model can be tested. In chapter 6 the hypotheses as formulated in chapter 3 will be discussed.

"...yet at the same time I do not wish to be perceived as hostile to TAM or Fred Davis, his coauthors, or many others contributing to the evolution and validation of TAM. Nevertheless, by necessity and design, my commentary points out what I believe to be fundamental problems with TAM and with the current state of the field. I submit that the field is at the threshold of crisis, if not chaos, in regard to explaining technology acceptance, and a paradigm shift is needed if progress is to be made."

Bagozzi, 2007, p. 244

CHAPTER 6   TESTING THE DYNAMICS OF THE MODEL

6.0   Abstract

The scores of the weighted additive and the simple additive model are comparable. Although some of the hypotheses have been confirmed - and therewith some of the dynamics of the multichannel model - by the research, the model cannot be accepted. The weighted additive or the simple additive model cannot explain the change in the channel preferences adequately. This means that the logic of TAM has to be doubted.

6.1   Introduction

In the preceding chapter it has become clear that the respondents do have a channel choice set: all respondents are able to rank the channels in order of their preference. Secondly it has become clear that the attributes score high on the importance scales: above 5.50 on a 7-point scale. The experiment, using a mobile telephone to purchase travel insurance, can be seen as an example of context specific weight factors. This will trigger the dynamics of the multichannel model as in shown figure 6.1:
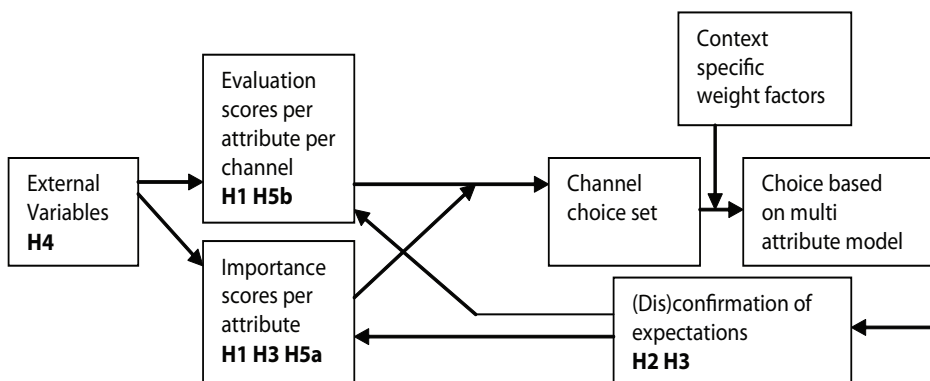
Figure 6.1 The multichannel dynamic model

In the experiment the respondents do not have a choice to choose another channel; they have to use the mobile Internet. As this is for most respondents a new channel, this will lead to (dis) confirmation of expectations, that will result in forming anew a choice set, that might differ from the channel choice set before the experiment. In this chapter the hypotheses as formulated in chapter 4 will be tested:

- *Hypothesis 1: the weighted additive and the simple additive model predict the preference ranking of the channels comparable.*

> • *Hypothesis 2: a positive or negative experience with the use of the mobile Internet will lead to a change in the channel preference choice set caused by a different score for the mobile Internet channel.*
> • *Hypothesis 3: the attributes that change after the use of the mobile Internet are the attributes on which the mobile Internet either scores low (negative experience) or scores high (positive experience).*
> • *Hypothesis 4: the level of experience with mobile Internet will influence the (dis)conformation of experience.*
> • *Hypothesis 5a: a change in the channel choice set is caused by a change in the importance of the attributes.*
> • *Hypothesis 5b: a change in the channel choice set is caused by a change in the evaluation of the mobile Internet channel.*

The testing of the hypotheses will give an answer to sub question 3, whether the model can be confirmed empirically. In the next paragraphs the results per hypothesis will be discussed. The chapter ends with a general conclusion. Before discussing the results per hypothesis the choice for the used statistical techniques is explained.

The use of several theories in one model has some implications for the complexity of the integrated model and the used statistical analyses. This is related to the distinction between variance and process models. Variance models try to predict levels of outcome from levels of predictor variables. The variation in the predictor variables accounts for variation in the outcome (Newman and Robey, 1992). Process theories look at the development of outcomes over time (Markus and Robey, 1988; Maxwell, 2005; Gregor, 2006). These outcomes are the result of a number of conditions that are a necessary but not sufficient cause (Newman and Noble, 1990). The difference is analogous to the distinction between cross-sectional (variance) and longitudinal (process) research. TAM is a variance model; EDT is a process model (Premkumar and Bhattacherjee, 2008). The combination of a variance model and a process model is not without debate (Gregor, 2006). Seddon (1997) has criticized the DeLone and McLean model on these grounds and it has been written that the combination "can be confusing" (DeLone and McLean, 2003; p. 16). The differences are summarized in illustration 6.1 (Mohr, 1982; p. 38):

	VARIANCE THEORY	PROCESS THEORY
Role of time	Static	Longitudinal
Definition	The cause is necessary and sufficient for the outcome	Causation consists of necessary conditions in sequence; chance and random events play a role
Assumptions	Outcome will invariably occur when necessary and sufficient conditions are present	Outcomes may not occur (even when conditions are present)
Elements	Variables	Discrete outcomes
Logical form	If X, then Y; if more X, then more Y	If not X, then not Y; cannot be extended to 'more X' or 'more Y'

Illustration 6.1 Variance and process theory

The methods to verify the model differ: cross-sectional surveys are used in TAM based research, longitudinal surveys are used in EDT based research. The inclusion of the consideration set (as the

channel choice set) has changed the character of the theory even more. The notion of "intention to use" has been transformed into preferences, where the channel with highest preference is the one most likely to be used. This has implications for the statistical analyses. In testing variance models usually statistical techniques as factor analysis and structural equation modeling are used (e.g. Davis, 1989; Davis et al., 1989). Although it has been stated that process theories "cannot be extended, as variance theories can, to explain or predict what happens when there is 'more' of a precursor variable" (Markus and Robey, 1988; p. 591), in practice EDT has been tested as a variance model. This is illustrated by Bhattacherjee (2001a) who reported that satisfaction explained 32% of the intention variance. Preference studies assume a different method of analysis. Two basic approaches are common: correlational approach and the confusion matrix. The correlational approach is based on calculating the coefficient of rank correlations; the confusion matrix compares the predicted rank with the actual rank on an individual basis (Wilcox and Austin, 1979). Both methods have advantages and disadvantages. This has been summarized by Bass (1972; p. 461) as follows:

> "The differences in purpose between attitude theories developed in social psychology and brand preferences studies suggest different methods of analysis. If the purpose is to study the attitudes of different people for a single object, then the analysis will of necessity be cross-sectional in character. It is well known that interpersonal utility comparisons cannot be given rigorous meaning; hence cross-sectional comparisons of attitude with independent measures of affect, no matter how carefully done, must be viewed with skepticism. Fortunately, in marketing studies of brand preference, interpersonal comparisons can be avoided, and attitudinal predictions of preference order can be confined to individuals".

This view is also taken by Bettman et al., (1975a; p. 152), who mention that "the most realistic and theoretically consistent approach is to analyze individual level data", basing this conclusion partly on Birnbaum (1973) who raised questions about the use of correlations as an index of fit between the model and the predictions. In this study the confusion matrix will be used (see also Massy, 1965; Bass and Talarzy, 1972; Bass and Wilkie, 1973; Wilkie and Pessemier, 1973) which shows the percentage of correct predictions (actual rank versus predicted rank) based on an individual level analysis.

The prediction of the preferences has a central place. This means that the preferences are measured on an individual level. The model (and alternative explanations) will be first evaluated on the correct prediction of the channel preferences. The other hypotheses are evaluated on the process character of the model, which means that the assumptions of the model are tested, not the explained variance. To give an example: if the model assumes that satisfaction with the channel leads to a different channel choice set, the analysis will compare satisfied and dissatisfied respondents and will find out whether there are significant differences. The analysis will not try to draw conclusions about the variance that is explained by the satisfaction level.

6.2   Testing the hypotheses[56]

Hypothesis 1: The scores of the multi attribute attitude (weighted additive) and simple additive model are comparable

This hypothesis is based on the assumption that if the importance scores for the attributes are high (as the pilot research revealed) there is hardly any difference in the predicting value of these two models. In table 6.1 the ratings of the predicted score versus the actual score are given per model. In the multi attribute attitude model the calculation is based on the summarization for all attributes of the importance score per attribute multiplied with the channel score on the attribute. Per channel

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56 The results in this chapter are, unless stated otherwise, based on the respondents who have conducted the experiment with the mobile Internet (n = 212).

this results in a score; the highest score among the channels is the predicted first choice of the respondent, the number two is the second choice et cetera. For the adding method only the scores of the channels on the attributes are added, there is no weighting involved for importance scores.

Predicted correctly	Multi attribute attitude model	Adding model	Ranking attribute model
First choice	66.5 %	67.0%	62.1%
Second choice	29.3%	31.5%	28.5%
Third choice	32.0%	34.1%	32.0%
Fourth choice	32.0%	30.3%	34.6%
Fifth choice	47.7%	46.1%	49.6%
TOTAL	41.5%	41.8%	41.4%

Table 6.1 Predicted versus actual choice scores [57]

First of all it can be concluded that both models score about the same results. Secondly it is obvious, in line with the pilot research, that the most preferred is predicted best; followed by the least preferred. Thirdly the overall scores are more than 40%. The question can be raised whether these scores 'prove' the weighted additive and/or simple additive model. The fact that the adding model scores as high as the multi attribute model can be explained by the fact that the attributes are all very important (lowest average on a 7-point scale is 5.48) and therefore the importance weighting does not differentiate much, which causes the adding model to produce the same results. This means the results confirm hypothesis 1.

To investigate whether the relevance of the importance scores is higher than is assumed by the weighted additive model respondents have also been asked to rank the attributes from 1 to 8 (1 being the most important attribute); in this way they are forced to differentiate between the attributes. In the third column these rankings are used to create a 'ranking attribute' model. The scores of the ranks have been first recoded, leading to rank 1 (most important) getting a score of 8, rank 2 a score of 7 et cetera. After that the scores of the channels on the attributes are multiplied with the recoded rank numbers. If for instance the attribute good information has the highest rank, the scores of the channel on good information are multiplied with 8. All the scores are added and the predicted and actual choice are calculated in the same manner as with the other two methods. Although the scores do not differ much, the ranking model seems to perform slightly better in predicting the least favorable channel, but the overall scores are similar to the other models. And, even more important, it scores less accurate on the preferred channel, which can be seen as the most important prediction.

The results indicate that there is indeed no significant difference between the weighted additive and the simple additive model. The explanation is obvious: by conducting qualitative research and only selecting the most important attributes, the weight factors are of little influence. This implicates

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57 If two channels are predicted to score the same rank, for instance the first rank, and one channel scores indeed as the first choice and the other channel as the second choice, only the first choice is calculated as predicted correctly. This is done because respondents had the choice to give channels the same ranking and is in line with other research (e.g. Leigh et al., 1984). Although this lowers the predictive strength of the model, it is used for all methods, therewith at least creating compatibility and avoiding a possible overestimation of the models.

that if one conducts research (marketing or scientific research) the questionnaire can be shortened by deleting the questions about the importance weights.

Hypothesis 2: more positive or negative experience with the use of the mobile Internet will lead to a change in the channel preference choice set

First of all the dynamics of the model have to be determined. Does the experiment with the mobile Internet lead to a significant change in the ranking of the channels? Table 6.2 provides the answer .

	Mean of the ranking (the lower, the more popular, score between 1 and 5)		Percentage that mentions channel as first choice		Percentage that mentions channel as second choice	
	before	after	before	after	before	after
Face-to-face	3.08	3.12	21	20	13	13
Telephone	2.58	2.80*	9	9	43	31
Internet	1.65	1.60	65	65	18	18
Mobile Internet	3.75	3.40*	1	3	20	30
Written communication	3.97	4.08*	4	2	6	8

Table 6.2 Ranking of the channels before and after the experiment[58]

The Wilcoxon signed rank test shows that the change of the ranks are significant for telephone, mobile Internet and written communication[59], although the change in the ranking of this last mentioned channel is not very high compared to the other two channels. The use of the mobile Internet leads to an increase in the ranking. After the use it does not score very high as the first chosen channel, but it has become an important alternative channel (the number 2 position), competing with the telephone channel. The dynamics in the model can also be shown by comparing the first choices before and after the experiment:

		First choice channel before experiment				
		Face-to-face	Telephone	Internet	Mobile	Written
First choice channel after the experiment	Face-to-face	79%	17%	1%	0%	25%
	Telephone	12%	61%	1%	0%	13%
	Internet	9%	22%	93%	33%	13%
	Mobile	0%	0%	4%	67%	0%
	Written	0%	0%	1%	0%	50%

Table 6.3 Preferred channel before and after the experiment

58 Percentages do not have to add to 100% as respondents were allowed to give the same ranking to more than one channel.

59 In this chapter the * mark in the tables refers to: statistically significant, Wilcoxon signed test, p , 0.05.

Now that is confirmed that the ranking of the channels change significantly, the hypothesis can be tested by including the level of satisfaction in the analysis as is indicated by the Expectation Disconfirmation Theory. Three groups are distinguished: negative (respondents with a general satisfaction score after the experiment of 1 – 3); neutral (respondents with a general satisfaction score after the experiment of 4) and positive (respondents with a general satisfaction score after the experiment of 5 – 7). The results for the respondents with a negative experience are as follows:

NEGATIVE ABOUT MOBILE INTERNET EXPERIMENT	Mean of the ranking (the lower, the more popular, score between 1 and 5)		Percentage that mentions channel as first choice		Percentage that mentions channel as second choice	
	before	after	before	after	before	after
Face-to-face	2.77	2.48*	34	32	5	16
Telephone	2.59	2.55	5	7	50	43
Internet	1.84	1.84	59	59	16	18
Mobile Internet	4.14	4.64*	0	0	16	5
Written communication	3.80	3.50	2	2	11	18

Table 6.4 Ranking of the channels, negative about the experiment

After the negative experience there seems to be a 'return' to the non-technical channels: face-to-face and writing communication increase in popularity. The Wilcoxon signed rank tests show the face-to-face channel has changed significantly (p = .024) and show a significant lower score for the mobile Internet channel (what is expected according to the hypothesis). The face-to-face and the written communication channel become more popular as a second preferred channel, at the expense of the mobile Internet.

A neutral satisfaction leads, as can be seen in table 6.5, to no significant changes in the scores of the mobile Internet channel, which is in line with the theoretical model.

NEUTRAL ABOUT MOBILE EXPERIMENT	Mean of the ranking (the lower, the more popular, score between 1 and 5)		Percentage that mentions channel as first choice		Percentage that mentions channel as second choice	
	before	after	before	after	before	after
Face-to-face	2.89	2.86	14	19	25	17
Telephone	2.44	2.50	11	8	56	56
Internet	1.61	1.50	71	69	17	19
Mobile Internet	4.06	4.03	0	3	3	3
Written communication	4.19	4.08	3	0	0	6

Table 6.5 Ranking of the channels, neutral about the experiment

Respondents that are positive (see table 6.6) about the mobile experiment show the largest number of changes. The Wilcoxon signed rank tests show significant changes for all channels except the Internet channel. The change for the mobile Internet is caused by the increasing popularity as the second chosen channel; this increase is at the expense of especially the telephone channel. The Internet channel remains stable.

POSITIVE ABOUT MOBILE EXPERIMENT	Mean of the ranking (the lower, the more popular, score between 1 and 5)		Percentage that mentions channel as first choice		Percentage that mentions channel as second choice	
	before	after	before	after	before	after
Face-to-face	3.24	3.41*	18	16	13	11
Telephone	2.61	2.95*	9	10	37	20
Internet	1.60	1.55	66	66	18	18
Mobile Internet	3.56	2.81*	2	5	25	47
Written communication	3.96	4.28*	5	3	5	5

Table 6.6 Ranking of the channels, positive about the experiment

The results confirm the expectation that a positive experience leads to a higher ranking of the mobile Internet channel and a negative experience leads to a lower ranking of the mobile Internet channel. This is in line with the Expectation Disconfirmation Theory and confirms hypothesis 2. This means that this part of model is confirmed.

Hypothesis 3: the attributes that change after the use of the mobile Internet are the attributes on which the mobile Internet either scores low (negative experience) or scores high (positive experience)

In table 6.7 the overall satisfaction with the mobile channel is taken into account. The importance scores of the positive respondents before and after the experiment are:

POSITIVE ABOUT THE EXPERIMENT	Mean importance before use of mobile channel	Mean importance after use of mobile channel	Evaluation score of mobile Internet (before use)	Mean score worse/better than expected	Percentage more positive than expected
Getting good information	5.95	5.80	4.80	3.95	37
Making right choice	5.78	5.79	5.15	4.48	51
Easy	5.78	5.84	5.18	5.19	72
Spending as little time as possible	5.49	5.60	5.36	5.27	71
Doing when I want	5.67*	5.95*	6.02	5.59	73
Easy communicating	5.69	5.57	4.37	4.06	35
Having control	5.76	5.71	4.88	4.72	55
Safety personal information	5.80	5.71	4.59	4.17	34

Table 6.7 Evolution of the attributes and mobile Internet, positive about the experiment

The respondents with a positive evaluation of the use of the mobile channel are especially positive about the attributes easy, spending as little time as possible and doing when I want. The changes for the attribute easy are not significant ($p > 0.05$), although the percentage more positive than expected is the third highest.

NEGATIVE ABOUT THE EXPERIMENT	Mean importance before use of mobile channel	Mean importance after use of mobile channel	Evaluation score of mobile Internet (before use)	Mean score worse/better than expected	Percentage more positive than expected
Getting good information	6.14	6.00	4.84	2.61	14
Making right choice	5.91	5.98	4.81	2.75	18
Easy	5.82	5.98	4.21	2.80	21
Spending as little time as possible	5.55	5.36	4.47	2.48	11
Doing when I want	5.66	5.75	6.12	4.98	64
Easy communicating	5.84	5.68	4.16	2.18	7
Having control	5.77	5.77	4.72	3.02	18
Safety personal information	5.73	5.75	3.81	2.66	11

Table 6.8 Evaluation of the attributes and mobile Internet, negative about the experiment

The respondents that have a negative evaluation (see table 6.8) of the experiment are only positive about the attribute doing when I want. This does not lead to a significant higher importance score for this attribute; the experiment does not lead to any significant change in importance ratings. This means that the mechanism with positive experience is different from a negative experience. Positive experience leads to a re-evaluation of the importance scores as a way of changing the ranking; a negative experience leads to less effect on the importance scores because the mobile Internet scores rather low before the experiment; rational reasoning is not needed to justify a new ranking. This means that hypothesis 3 is only confirmed for respondents with a positive experience.

Hypothesis 4: the level of experience with mobile Internet will influence the (dis) conformation of experience.

To test hypothesis 4 the use of the mobile Internet (before the experiment) has been recoded into respondents with no experience and respondents with experience. To differentiate within the group of mobile Internet users - according to frequency of use - is not possible as there are only 85 respondents with experience with mobile Internet. Table 6.9 shows the results for the two groups.

n=212	Mean score (worse/better than expected		Percentage that scores worse than expected		Percentage that scores better than expected	
	no experience	experience	no experience	experience	no experience	experience
Getting good information	3.46	3.67	47	42	28	27

Making the right choice	3.87	4.28	40	25	36	45
Easy	4.47	4.77	24	22	55	60
Spending as little time as possible	4.34	4.83	27	23	50	62
When I want	5.43	5.38	7	2	71	67
Easy communicating	3.39	3.70	49	40	24	27
Having control	4.18	4.37	25	25	43	43
Safety personal information	3.59	3.88	41	32	26	25
OVERALL SATISFACTION (1 low – 7 high)	4.48*	4.93*	23	17	57	73

Table 6.9 Satisfaction with the mobile Internet, experience with mobile Internet

The results do not seem to support the hypothesis: respondents with experience with the mobile Internet score more positive about their experience: the neutral overall satisfaction is 20% for the respondents without experience and 10% for the respondents with experience. An explanation for this counter intuitive fact might be that the respondents with experience are positively surprised about the application for purchasing travel insurance and not so much surprised about the mobile Internet. Another explanation might be found in the score on the attributes. The experienced mobile Internet users have higher positive percentages on all attributes; especially on easy, spending as little time as possible and when I want. This last one is surprising because it is a specific strength of mobile Internet that is widely known. The high scores on easy and spending as little time as possible might indicate the satisfaction with the mobile site itself and not with the channel in general. The inexperience with purchasing travel insurance in general might also be of importance.

The effects on the ranking are presented in table 6.10. The results indicate that the experienced users have indeed evaluated the mobile Internet site itself with their satisfaction scores. A positive experience for the experienced users leads to less adjustments than for the group without experience; the reverse seems to occur with a negative experience. This might indicate that the impact of a positive experience has less effect than a negative experience, which is in line with theories about risk conversion. If you do not know what to expect (no experience) a negative experience is taken more for granted, a positive experience leads to an adjustment.

% of respondents (not) changing the ranking of the mobile Internet channel	Satisfaction < 4		Satisfaction > 4	
	No experience N= 35	Experience N=11	No experience N=94	Experience N=67
Increase	6	18	61	33
Decrease	23	55	8	6
Unchanged	71	27	31	61

Table 6.10 Change of ranking of the mobile Internet, experience and satisfaction with mobile Internet

This seems to indicate that the levels of expectations are different for both groups. Given the small number of the groups with a low satisfaction score, only a comparison is made for the respondents with a positive evaluation (satisfaction score above 4).[60]

	No experience	Experience
Satisfaction good information	3.92	4.12
Satisfaction right choice	4.32	4.64
Satisfaction easy	5.16	5.30
Satisfaction little time as possible	5.16	5.45
Satisfaction when I want	5.60	5.75
Satisfaction easy communicating	4.08	4.46
Satisfaction control	4.66	4.80
Satisfaction safety personal information	4.15	4.38

Table 6.11 Satisfaction scores mobile Internet, experience

Although none of the differences are significant (Mann Whitney; $p < 0.05$), the satisfaction scores of the experienced users are higher on all attributes. In table 6.12 it is shown that they score also higher on their expectations (the evaluation of the mobile Internet). Therefore their expectations are indeed higher than for the non experienced group and they also are more satisfied than the non experienced group, which might compensate. It leads in fewer cases to a higher ranking of the mobile channel.

Score evaluation mobile channel on:	No experience	Experience
good information	4.62	4.91
right choice	4.96	5.37
easy	5.04	5.46
little time as possible	5.14	5.63
when I want	5.89	6.28
easy communicating	4.29	4.54
control	4.90	4.88
safety personal information	4.53	4.59

Table 6.12 Evaluation of the mobile Internet, experience with mobile Internet

An explanation might be that they score higher on the ranking before they conduct the experiment. Of the respondents without experience more than 60 % (60 of the 94) give mobile Internet the ranking 4 or 5 before the experiment. It is evident that they can easily increase the ranking after a positive experience. For the respondents with experience and a positive evaluation more than

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60 To make a quick comparison possible the means are shown. To test for significance between the scores, the non-parametric tests are used.

60% (45 of 69) score the channel on the first three places; after using the channel hardly anybody increases the ranking to the first place.

Hypothesis 5a: a change in the channel choice set is caused by a change in the importance of the attributes as indicated by the weighted additive model.

As is indicated by hypothesis 5a the change in preferences will be caused by a change in the importance scores.

Attributes	Mean importance before use of mobile channel	Mean importance after use of mobile channel	Evaluation score of mobile Internet (before use)	Mean score worse/better than expected	Percentage more positive than expected
Getting good information	5.93	5.82	4.65	3.52	27%
Making right choice	5.74	5.77	4.91	3.99	39%
Easy	5.71*	5.86*	4.80	4.56	56%
Spending as little time as possible	5.47	5.53	5.11	4.48	53%
Doing when I want	5.60*	5.82*	5.99	5.42	70%
Easy communicating	5.63	5.55	4.27	3.48	25%
Having control	5.71	5.63	4.73	4.23	43%
Safety personal information	5.73	5.71	4.23	3.67	26%

Table 6.13 Importance scores of attributes, before and after the experiment

Two attributes become, after using the mobile Internet, significantly more important: easy and doing when I want. It can be argued that doing when I want is a typical strength of the mobile Internet: the evaluation score on this attribute is the highest; experiencing this in the experiment leads respondents to increase the importance of this attribute. The increasing importance of easy is more difficult to explain: it is not the weakest attribute. An explanation might be that the experience on this attribute is relatively more positive. The two attributes give the highest satisfaction rates (the mean and the percentage positive after the experiment).

These results seem in favor of the weighted additive model. This can be verified in another way. If the weighted additive model is correct, the change of the importance scores has to lead to new preferences. The results of the additive model compared to the weighted additive model will deteriorate after the experiment: respondents change their importance weights, therewith creating new scores. As the adding method knows no importance weights, the scores of the channels remain the same. The table shows the scores before and after the experiment. The scores after the experiment are for the simple additive model slightly lower, especially for the fifth choice. A comparison with the results of the weighted additive model for the same group (participants of the experiment) shows that this model performs better for the second choice and remains stable on the fifth choice. The differences between both models are not of the magnitude that the hypothesis is confirmed.

	Predicted correctly using simple additive model		Predicted correctly using weighted additive model	
	Before	After	Before	After
First choice	70%	67%	69%	66%
Second choice	34%	36%	31%	37%
Third choice	35%	31%	33%	31%
Fourth choice	30%	29%	31%	30%
Fifth choice	51%	46%	50%	50%

Table 6.14 Correctly predicted choices, per model

In the next table the scores before and after the experiment are presented. The results hardly differ: for about 85% of the respondents there is no difference in the prediction. The models either predict it rightly twice or wrongly twice. This is not in line with the assumption that the adding model would have less predictive power after the experiment and raises once again doubt about the relevance of the weighted additive model.

	Simple additive model BEFORE		Weighted additive model BEFORE	
AFTER	First rank not correct	First rank correct	First rank not correct	First rank correct
First rank not correct	25%	10%	25%	10%
First rank correct	6%	60%	7%	59%

Table 6.15 Predicted correctly before and after the experiment, per model

An argument in favor of the weighted additive model is the fact that the importance scores for most attributes are slightly higher after the experiment, therewith creating the same situation as before the experiment and therewith explaining why the importance scores are of no importance. This means however that the weighted additive model is not useful if the important attributes are elicited specifically for the research question. Using only important attributes means that the simple additive model is as reliable. However, this conclusion means that hypothesis 5b has to be confirmed as the dynamics of the attitude change imply that a change occurs either by a change in the importance of the attributes or a change in the evaluation of the channels on these attributes.[61]

Hypothesis 5b: a change in the channel choice set is caused by a change in the evaluation of the mobile Internet channel

After conducting the experiment the respondents evaluate the mobile channel by stating whether the performance on the attributes is better/worse than expected. These scores have been used to recode the evaluation of the mobile channel. The new score on the attributes for the mobile Internet is calculated as follows: Old evaluation score + Expectation satisfaction score – 4. This means that if the channel performs as expected (score 4), there is no change in the score. If the channel

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61 The other possibilities for a change in attitude, add new attributes and change beliefs about the other channels' attributes (Bagozzi et al., 2003), are not included in this research.

scores much better than expected (7), the evaluation score is increased with three points. Similar calculations are made if the scores are worse than expected. With the new evaluation scores the scores for the weighted additive model and the simple additive model are calculated per channel. Table 6.16 shows the scores for the two decision making strategies.

	Predicted correctly using simple additive model			Predicted correctly using weighted additive model		
	Before	After	After, using recoded mobile scores	Before	After	After, using recoded mobile scores
First choice	70%	67%	51%	69%	66%	50%
Second choice	34%	36%	31%	31%	37%	34%
Third choice	35%	31%	32%	33%	31%	32%
Fourth choice	30%	29%	34%	31%	30%	35%
Fifth choice	51%	46%	53%	50%	50%	56%

Table 6.16 Predicted correctly after using recoded mobile scores, per model

Using the recoded scores does not improve the predictive power of the two strategies. On the contrary: the results for the first choice are worse. This might indicate that the respondents do not adjust the scores of the channels on the attributes in this way. Rejecting hypotheses 5a and 5b has a number of consequences as will become clear in the conclusions.

6.3   Conclusions

Figure 6.2 shows the model and the hypotheses.
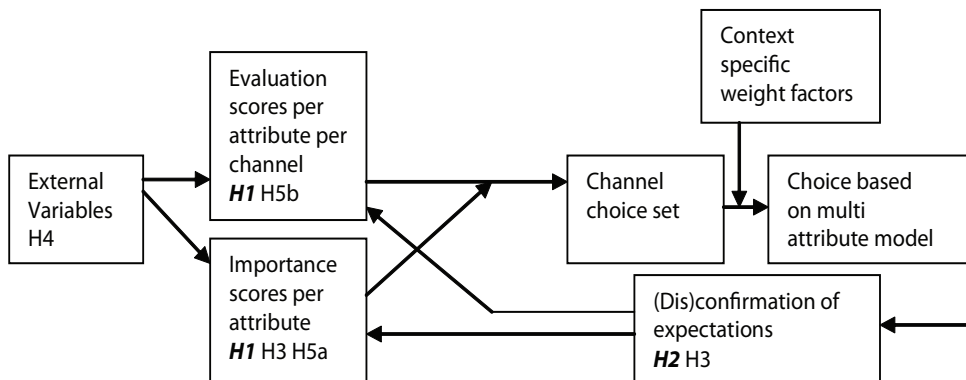
Figure 6.2 The multichannel dynamic model

Only the hypotheses printed in bold italics have been confirmed. Hypothesis 1, the scores of the weighted additive and simple additive model are comparable, has been confirmed. Both models predict the choice correctly in more than 40% of the cases; the first choice is correctly predicted in 2/3 of the cases in both models. Hypothesis 2, a more positive or negative experience with the use of the mobile Internet will lead to a change in the channel preference choice set, has also been confirmed. A neutral experience results in no changes in preferences; negative and positive experiences effect

the choice in the expected direction. These results confirm the Expectation Disconfirmation Theory. Hypothesis 3, the attributes that change after the use of the mobile Internet are the attributes on which the mobile Internet either scores low or scores high, has only partly been confirmed. The respondents with a positive experience about the experiment behave as the hypothesis predicts; respondents with a negative experience do not show statistically significant differences. Hypothesis 4, the level of experience with mobile Internet will influence the effect of the experience, has not been proven either. Respondents with experience with mobile Internet are more positive about the experiment than respondents without experience; a result that contradicts the hypothesis. Hypotheses 5a and 5b, explaining the reasons for changing the channel preferences, have not been confirmed.

The results of the survey cast doubt on the model. Respondents do change their preferences based on the satisfaction with the mobile Internet during the experiment, as is predicted by the Expectation Disconfirmation Theory. However, the underlying dynamics that lead to a different preference have not become clear from the experiment. This is caused by the failure of the decision making models. Another unsolved issue is the importance of the external variable experience with the mobile Internet.

It cannot be concluded from the results what decision making model is valid. The weighted additive and the simple additive score comparable results that can be explained with the high importance scores of the attributes. Explaining the change in the preferences after the experiment becomes problematic as both models score again comparable. This means that the change in importance scores (significant changes of two attributes) cannot be the explanation. Also there is no indication that respondents re-evaluate the scores of the mobile Internet channel. This implies that other decision making strategies have to be evaluated. In chapter 7 a number of alternative explanations for the results will be presented.

"... consumer preference formation may be more like architecture, building some defensible set of values, rather than like archaeology, uncovering values that are already there."

Bettman et al., 1998; p. 188

CHAPTER 7 ALTERNATIVE EXPLANATIONS AND DISCUSSION

7.0 Abstract

Considerations related to the structure of the research do not explain the found results. The used methodology, face-to-face interviewing, is not an explanation: an online conducted research shows the same results. The same applies for another alternative explanation: respondents change their attitudes because of the fact that they are asked the same questions twice. The control group – that has not conducted the mobile Internet experiment - shows no significant changes, therewith indicating that the changes in the ranking of the channels are caused by the experiment. This means that alternative explanations for the findings have to be found. These alternatives are based on the consumer decision making process. An analysis of the results shows that the Elimination By Aspects (EBA) strategy is the most likely used strategy. This strategy explains the dynamics of the multichannel behavior as has been found in the survey. An alternative explanation for the results is the attraction effect. A combination of these two alternative explanations is presented as the most likely explanation.

7.1 Introduction

In chapter 6 it has been concluded that a number of elements of the model has not been confirmed by the research. This is preliminary caused by the inability to 'prove' the decision making model. Although respondents do change their preferences and do change the importance scores, it cannot be concluded that this is caused by the dynamics of the multichannel model based on the weighted or simple additive decision making strategy. In this chapter a number of alternative explanations for the findings is discussed. Using Putnam's strategy of eliminating the "suspects" (2002) a number of explanations is possible. First three general considerations will be discussed: the used methodology, the question whether respondents 'always' change their opinion and the influence of the research itself on respondents' opinions. If one of these possibilities explains the raised doubts, no other possible explanation has to be found. In that case the results are caused by general methodological issues. If these general considerations are not able to explain the found results, the answers have to be found in the theoretical foundations of the model and therefore other decision making strategies (besides weighted additive and simple additive) have to be included in the analysis.

7.2 General explanations

Methodology

A first possible answer is the used fieldwork methodology. The fact that the interviews are conducted face-to-face might have influenced the answers. Choices are said to be influenced by the "regard subjects have for the experimenter (Plott and Zeiler, 2007; p. 1462) and it has been stated (Ofir et al, 2009) that respondents want to be friendly and to be helpful. Interviewer bias, or even better respondent bias, occurs because respondents want to be friendly to the interviewer. They assume that the interviewer has an interest in the outcome of the survey and assume that the interviewer has a preference for different scores. In this research this especially applies to the respondents that conduct the experiment: favoring the mobile Internet channel seems to the respondent what the interviewer wants. The fact that the interviewers recruited the respondents within their own network might have increased this bias.

To research whether this methodological issue has led to a bias in the research, a different research method has been used. The same questionnaire has been used to conduct a research online. The database of a Dutch market research agency[62] has been used. A total of 6600 respondents have been invited online to participate in an online research on new media; this has led to 906 positive responses (13.7%). Sending online the questionnaire to these participants has resulted in 410 (45.3%) completed questionnaires. Of these 410 respondents a total of 112 respondents have conducted the experiment with the mobile Internet in the period August – September 2010. The invitations and pilot interviews have been conducted in the second half of August; the genuine fieldwork in the second half of August and the first two weeks of September. The group (27%)[63] that has conducted the experiment with the mobile Internet has, according to their information, unlimited access to mobile Internet, which means that conducting the experiment does not cost the respondent any money. A disadvantage – see chapter 4 - of this method is the lack of control over the interview. Although there is not a 100% certainty the registration of the visits and the registration of the duration of the visits show increased activity during this fieldwork period, therewith indicating that respondents indeed visited the site and conducted the experiment.
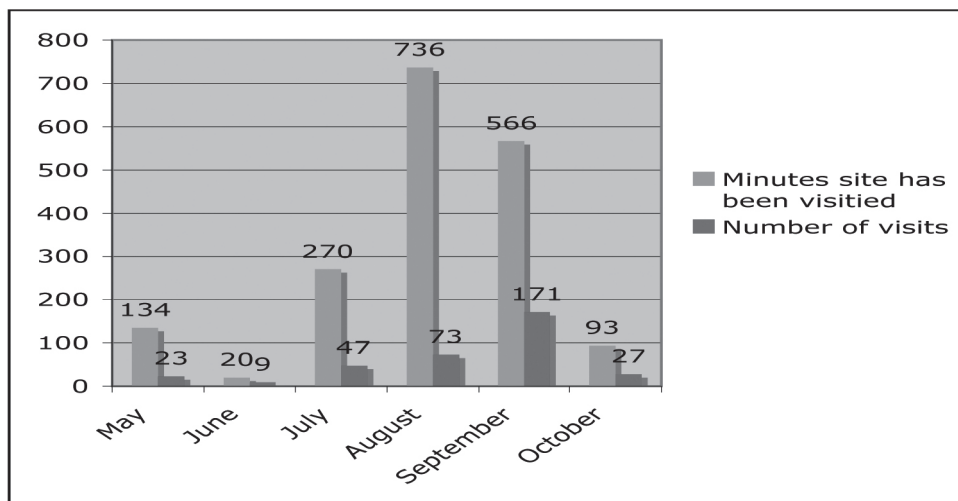
Illustration 7.1 The use of the mobile web site

The composition of the sample is what is more or less common in online research: relatively many high educated women above 45 years.

Sample composition	
Men	46%
Women	54%
younger than 25 years	5%

62 This online research has been made possible by the valuable support of Hans van Galen, director of ResearchMC.

63 The percentage of 27% with Internet access on their mobile phone is close to the 30% (of the people with Internet access) reported by the CBS (2009).

25 – 45 years	44%
older than 45 years	51%
lower educational level	12%
middle educational level	29%
higher educational level	60%

Table 7.1 Sample composition online research

The success rate of the respondents with the mobile Internet is much lower than in the face-to-face research: only 58% of the respondents succeeded in purchasing travel insurance through the mobile Internet. Table 7.2 shows the result of the online sample compared with the face-to-face sample.

	Mean of the ranking (the lower, the more popular, score between 1 and 5)		Mean of the ranking (the lower, the more popular, score between 1 and 5)	
	Face-to-face		Online	
	Before	After	Before	After
Face-to-face	3.08	3.12	3.59	3.70
Telephone	2.58	2.80*	2.49	2.77*
Internet	1.65	1.60	1.31	1.37
Mobile Internet	3.75	3.40*	3.36	3.13*
Written communication	3.97	4.08*	4.00	4.07

Table 7.2 Ranking of the channels before and after the experiment, per research method

The results are comparable: the ranking of the telephone and the mobile Internet channel change significantly[64] in both samples. In table 7.3 the importance scores of the attributes are compared. Here the significant changes are in both surveys for the same attributes but in an opposite direction: easy and doing when I want become more important for the face-to-face sample and less important for the online sample. The online sample also significantly lowers the importance score of easy communicating after the experiment.

	mean importance			mean importance		
	face-to-face			online		
attributes	before	after	Wilcoxon signed rank test , asymp. sig. (2-tailed)	before	after	Wilcoxon signed rank test , asymp. sig. (2-tailed)
Getting good information	5.93	5.82	.137	5.83	5.85	.932

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64 In this chapter an * in the tables refers to: statistically significant, Wilcoxon signed rank test, p < 0.05.

Making right choice	5.74	5.77	.751	5.88	5.86	.604
Easy	5.71	5.86	.038*	6.09	5.84	.014*
Spending as little time as possible	5.47	5.53	.450	5.33	5.36	.839
Doing when I want	5.60	5.82	.021*	5.91	5.76	.015*
Easy communicating	5.63	5.55	.312	5.71	5.43	.009*
Having control	5.71	5.63	.383	5.86	5.77	.328
Safety personal information	5.73	5.71	.819	5.87	5.88	.947

Table 7.3 Importance scores of the attributes before and after the experiment, per research method

Although these scores give rise to some interesting possible explanations, it suffices here to conclude that the used research methodology does not explain the higher score of the mobile Internet after the experiment. Explaining the differences in detail is beyond the scope of the purpose of the online research.

Respondent instability

An alternative explanation is that if respondents are asked twice the same more or less complicated question(s), they give different answers, without any reason. Dell'Olio et al. (2010) have conducted a survey on the satisfaction of public transportation. They have asked twice an overall evaluation during the survey. The first time after answering some general questions; the second time after scoring the relevant attributes (like waiting time, journey time, et cetera). The difference between these scores "shows that around 35% of the people questioned changed their score" (p. 390). The number of respondents improving their score is twice as large as the number of respondents reducing it. They also find that the importance weights of variables change after thinking about the relevant attributes. They did not find any differences between men and women, age groups and income groups. To review this possibility (respondent instability because of asking them the same questions twice) the control group has been included in the research. The control group consists of 84 respondents.

The socio-demographics are shown in table 7.4.

Sample composition	
Men	49%
Women	51%
younger than 25 years	16%
25 – 45 years	47%
older than 45 years	37%
lower educational level	14%
middle educational level	33%
higher educational level	52%

Table 7.4 Sample composition control group

In table 7.5 the results of the control group and the group that conducted the experiment are shown. The scores between the two samples are comparable before the experiment. After the experiment the control group shows no significant changes in the ranking of the channels, which indicates that the changes in the experiment group are caused by the experiment itself and not by the fact that the questions have been asked twice.

	mean of the ranking (the lower, the more popular, score between 1 and 5)		mean of the ranking (the lower, the more popular, score between 1 and 5)	
	face-to-face		control	
	before	after	before	after
Face-to-face	3.08	3.12	3.13	2.93
Telephone	2.58	2.80*	2.32	2.36
Internet	1.65	1.60	1.81	1.88
Mobile Internet	3.75	3.40*	3.80	3.86
Written communication	3.97	4.08*	3.93	3.82

Table 7.5 Ranking of the channels before and "after" the experiment, control group

This means that the change in the ranking of the channels is not caused by the experimental design of the research. This does not mean however that respondents might not be influenced by the research. This option is discussed in the following paragraph.

The research has caused a change in attitudes

The research itself might have caused a change in attitudes. This is based on the assumption that consumers' attitudes do not always exist but are constructed during the process (Payne et al., 1992a; Morwitz et al., 1993; Simmons et al., 1993; Yoon and Simonson, 2008), resembling part of the argument in the previous paragraph. This constructing during the process has two possible effects. First of all it might be possible that respondents access by answering the questions their attitudes and state their intentions (in this research their preferences) consistent with their attitudes. If their attitudes had not been asked, they might have had a different intention. A second possibility is that respondents "engage in substantial cognitive work that may produce a subsequent change in attitudes and intentions" (Morwitz et al., 1993; p. 46). It can be expected that this happens more with low interest products/services than with high involvement products/services.

The so-called mere measurement effect has been demonstrated in a number of surveys (e.g. Fitzsimons and Shiv, 2001; Dholakia and Morwitz, 2002; Levav and Fitzsimons, 2006; Janiszewski and Chandon, 2007). Morwitz et al. (1993) investigate the relation between measuring (in a panel) the intention to buy an automobile and a PC and the actual buying. They find evidence for the hypothesis that the measurement of the intention to buy increases the future purchasing of these products. This might be caused by the cognitive work that will be activated by the questions. If the activity is positively valued, this will lead to positive thoughts about future behavior. A related factor is whether the pre questioning attitude is positive or negative. If it is positive, the questions will lead to an increase in the purchases, if it is negative it will lead to a decrease. They also find that people with previous product experience are less influenced. Mourali et al. (2007) find that preferences of respondents are influenced by the fact that they have to justify their choice(s). They distinguish between promotion-type products (like wine and restaurant) and prevention-type products (like

sunscreen and mouthwash), resembling the difference between negative and positive reinforcement products. They find that respondents use more often a compromise strategy for the prevention-type products and more often an attraction strategy for the promotion-type products. The use of a channel for purchasing travel insurance is most comparable with a prevention-type product.

To test the assumption that respondents rationalize their choices because of the survey, an analysis of the right predicted preferred channel before and after the experiment has been made. The models included in the comparison are the simple additive and the weighted additive.

	BEFORE	AFTER
Both models correct	68%	64%
One model correct of which:		
multi	0%	0%
add	2%	4%
No model correct	30%	32%

Table 7.6 Respondents predicted correctly before and after the experiment, per model

Table 7.6 shows that the number of respondents that do not fit into one of the three models stays the same. This does not support the assumption that respondents rationalize their choices according to the simple additive and weighted additive model because of the survey.

As the three "usual suspects" cannot be used as an explanation, it is time to review a number of explanations based on alternative decision making strategies.

7.3 Theoretical explanations

Alternative decision making strategies

As the general explanations do not explain the results of the survey, other options have to be explored. First of all it is possible that the respondents use other (besides simple additive and weighted additive) decisions making strategies. The review of decision making strategies has made it clear that there are several 'competing' models to the simple additive and the weighted additive model. From the thinking aloud protocol research it has been concluded that in choosing a channel, the most common used strategies, besides the weighted additive and the simple additive model, are the lexicographic and the elimination by aspects (EBA) strategies. An explanation for the found results might be the use of these other decision making strategies by the respondents. Therefore these four models are compared in this paragraph.

Table 7.7 shows the results of the four models:
.

Predicted correctly	Multi attributte attitude model	Adding model	Lexicographic	EBA
First choice	66.5 %	67.0%	53.9%	72.5%
Second choice	29.3%	31.5%	30.9%	
Third choice	32.0%	34.1%	27.3%	

Fourth choice	32.0%	30.3%	29.7%	
Fifth choice	47.7%	46.1%	43.8%	
TOTAL	41.5%	41.8%	37.1%	

Table 7.7 Predicted correctly per model, extended [65]

First the results of the lexicographic model will be discussed. By using the ranking of the attributes it is possible to evaluate whether the lexicographic strategy predicts the results more accurate than the weighted and simple additive. In the lexicographic strategy alternatives are compared on the most important attribute and the channel with the highest score on this attribute is chosen. If two channels or more have the same score on the most important attribute, the channels are compared on the second most important attribute and so on. The importance scores have been recoded using a method proposed by Chrzan (2009). If j is the importance score, the first step has been to make j 10. Then the importance scores are rescaled. If n is the number of attributes, the most important attribute gets the score $j^{(n-1)}$, the second most important one gets the score $j^{(n-2)}$ and so on. In this research this means that the most important attribute gets the score 100,000,000, the second 10,000,000 et cetera. After recoding the standard linear model, (importance * attribute 1) + (importance * attribute 2) + ..., can be used.

The scores show that the lexicographic model predicts less correctly compared to the other models. The score of 54% for the first choice is in line with other research: Chrzan (2009) mentions 10 studies with a fit between 31% and 66 % and an average percentage of 52%. Chrzan and Malcolm (2009) report a percentage of 52% correct predictions in a frozen pizza case study. A break-down of the respondents on an individual level reveals the predictive power of the three models, based only on predicting the first choice correctly.

Table 7.8 shows that in 65% of the cases the multi attribute and adding model predict correctly; in almost half of the cases all three models predict properly. A possible explanation is the fact that the lexicographic model can be viewed as a special form of the linear model, namely one in which the score on the most important attribute cannot (or hardly) be compensated by the scores on the other attributes. Given the high scores of the importance scores on all attributes, this explanation can be doubted. In 6% of the cases the lexicographic model is the only model that predicts correctly, therewith indicating that a number of respondents uses this method.

All three models correct	47%
Two models correct of which:	
multi and adding	18%
multi and lexicographic	1%
adding and lexicographic	0%

65 If two channels are predicted to score the same rank, for instance the first rank, and one channel scores indeed as the first choice and the other channel as the second choice, only the first choice is calculated as predicted correctly. This is done because respondents had the choice to give channels the same ranking and is in line with other research (e.g. Leigh et al., 1984). Although this lowers the predictive strength of the model, it is used for all methods, therewith at least creating compatibility and avoiding a possible overestimation of the models.

One model correct of which:	
multi	0%
adding	2%
lexicographic	6%
No model correct	26%

Table 7.8 Respondents first choice predicted correctly before the experiment

About one quarter of the respondents does not fit one of the models. This is of course an interesting group as it is not clear from the statistics what kind of strategy they use. In table 7.9 a comparison of this group with the other respondents is made:

Channel of first choice	No predicted strategy	Predicted strategy
Face-to-face	17.6%	19.5%
Telephone	25.0%	6.7%
Internet	51.5%	70.3%
Mobile	2.9%	1.5%
Written	2.9%	2.1%

Table 7.9 Preferred channel, per predicted strategy (three models)

The differences are statistically significant (chi-square; $p < 0.05$). The group with apparently another strategy prefers more often the telephone and less the Internet channel. An analysis of the socio-demographic variables shows no significant relations, neither does experience with purchasing travel insurance or experience with the mobile channel. An analysis of the most important attribute shows there is no significant difference between the two groups. An explanation might be that this group has remained more loyal to their 'traditional' channels. The choice of a channel is more of a habit, the reasoning behind the choice is not really based on rational decision making but on behavior in the past. Another way is looking at which preferred channel is predicted best[66]:

	Face-to-face as first choice	Telephone as first choice	Internet as first choice
Predicted correctly	60%	40%	75%
Predicted wrongly	40%	60%	25%

Table 7.10 Predicted correctly by three models, per preferred channel

These differences are statistically significant (chi-square; $p < 0.05$). The question is why the scores are as high as 75% for the Internet channel and as low as 40% for the telephone channel. This indicates that there might be a relation between the chosen decision strategy and the choice, indicating once again that some respondents might choose out of habit (for the telephone channel). However, an explanation for the found results is not given yet.

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66 The mobile Internet and written communication channel are excluded because of the small number of respondents choosing these channels.

A fourth strategy that has received much attention in the literature (see chapter 2) is the Elimination By Aspects strategy (EBA). During the thinking aloud protocol research it has been found that this strategy is also used when selecting a channel. In the EBA strategy alternatives are (like lexicographic strategy) first evaluated on the most important attribute, but in this strategy a cutoff is used (alternatives must meet the cutoffs). If two alternatives meet the cutoff on the most important attribute, they are evaluated on the second most important attribute (cf. Slovic et al., 1977; Bettman et al., 1998; Gilbride and Allenby, 2006) until one option remains.

To evaluate whether this strategy has been used by the respondents, the cutoff values have to be known and the importance scores have to been known. In this research only the importance scores are available, so several assumptions are necessary to calculate the predictive power of this model. First it is assumed that only attributes with an importance score of 5 and higher are relevant. The basic idea behind this is that the attributes are selected on their importance (see the average scores of above 5.5). If respondents find the importance 4 or lower, there is a fair reason to assume that they will not use that attribute in eliminating the options. A second assumption is that a channel must score on the important (with an importance score of 5 or higher) attributes at least neutral, that is 4 (on a score of 1 to 7). For all respondents it has been scored on an individual level whether the channels score 4 or higher on the attributes with an importance score of 5 and higher. If a channel fulfills these demands, the channel has been characterized as suitable for the first rank. Based on these scores the channels that remain suitable have been compared with the actual choice of the preferred channel. In 72.5% of the cases the preferred channel corresponds with the possible channel, i.c. the channels that meet the cutoffs. An analysis of the respondents of which the first choice is not correctly predicted shows, as before, no significant differences on socio-demographic characteristics as age, sex and education. The experience with mobile Internet and travel insurance is also not of any significant importance. Adding the EBA estimation method increases the number of respondents that can be predicted with at least one model from 74% to 87%. Of the respondents (26%) that do not fit into one of the three above discussed models more than half fits into the EBA strategy, therewith indicating that this is an important strategy for a number of respondents, which is in accordance with the findings in the thinking aloud protocols (see chapter 3).

Table 7.11 shows that the preferred channel of this group differs from the other groups. The respondents that do not fit into one of the four models favor the 'traditional' channels more than the respondents that do fit in one of the models, even more than respondents that do not fit into the described three models. Once again it can be argued that these are respondents that have not switched to new channels and base their decision on behavior in the past and not on some decision making strategy.

	No predicted strategy based on multi attribute, adding and lexicographic	No predicted strategy based on multi attribute, adding, lexicographic and EBA	All respondents
Face-to-face	18%	28%	19%
Telephone	25%	22%	14%
Internet	52%	44%	63%
Mobile Internet	3%	0%	2%
Written communication	3%	6%	3%

Table 7.11 Preferred channel, per predicted strategy (four models)

The EBA estimation model scores higher than the weighted and simple additive model. Given the total of 40% correctly predicted rankings it might be concluded that the weighted additive and simple additive model, if relevant, should only be used for the first choice, although results for the least favorable channel are almost 50%. An explanation for this finding might be that consumers have a strong opinion about their first choice and hardly evaluate the other channels. Therefore they have not very strong opinions on these channels, except for the least popular channel, for which they have strong (negative) opinions. Another explanation might be found in the EBA strategy. The first channel to drop is clear, the channel that meets the cutoff for all the attributes is clear as well. The three channels in between are more or less desultory.

It is interesting to compare the predictive power of the models after the experiment. The results of the models after the experiment are summarized in table 7.12.

After the experiment	Simple additive	Weighted additive	Lexicographic	EBA
First choice	67%	66%	56%	76%
Second choice	36%	37%	30%	
Third choice	31%	31%	29%	
Fourth choice	29%	30%	29%	
Fifth choice	46%	50%	44%	

Table 7.12 Predicted correctly after the experiment, per model

The scores are hardly different; the lexicographic strategy still scores the lowest of the four strategies. The use of the EBA model, calculated as before but now for the scores after the experiment, results in 76% of the respondents qualifying for this method. The percentage of respondents that fit into at least one of the four models increases to 89%. These results lead to the conclusion that the weighted and simple additive models do not capture the decision making process regarding multichannel behavior. First of all the EBA model has a higher score, before and after the experiment. Secondly the models do not provide any explanation for the dynamics of the multichannel behavior. After adjusting for the changed evaluation of the mobile Internet channel only the EBA scores a higher prediction score after the experiment. This can be explained by the logic of the EBA strategy: mobile Internet reaches the cutoff more often, because the evaluation scores of this channel increase. The fact that the importance scores of the attributes - on which the mobile Internet channel scores high - increase confirms this assumption.

So far the results have only been studied on an aggregate level. The results indicate that respondents might use different decision making strategy, of which EBA is the most used (that is, predicts the first choice best). To explore whether the EBA can be seen as the dominant decision making model, the results are analyzed for several groups based on gender, age and education. In the following paragraph the socio-demographic characteristics will be used to find further evidence for the relevance of the EBA decision making strategy.

The use of several decision making strategies: background variables

In table 7.13 the scores of the different groups per decision making strategy are given. Only the statistical differences between men and women are for a number of the models significant[67]. This

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67 In this chapter ** indicates: statistically significant, chi-square, p , 0.05.

means that first in this paragraph the focus will be on explaining the differences in decision making between men and women as the results seem to indicate that women use less the four models included in this survey.

	gender		education			age			experience mobile	
	male	female	low level	middle level	high level	< 25	25 – 45	45 and older	no	yes
first rank multi attribute model correct	72%	64%	67%	66%	73%	66%	69%	73%	68%	71%
first rank adding model correct	73%	66%	68%	66%	74%	62%	64%	69%	68%	75%
first rank lexicographic correct	63% **	48% **	56%	48%	64%	57%	50%	63%	56%	58%
EBA first rank possible	79% **	64% **	69%	75%	72%	76%	76%	66%	75%	66%
first rank after multi attribute model correct	67%	63%	64%	61%	70%	55%	67%	72%	65%	67%
first rank adding model correct	66%	67%	67%	62%	71%	57%	70%	70%	66%	70%
first rank lexicographic after correct	62%	49%	55%	48%	64%	47%	52%	67%	56%	57%
EBA first rank after possible	81% **	68% **	72%	74%	80%	72%	78%	75%	77%	73%
At least one of the four models	90%	88%	94%	83%	92%	89%	87%	92%	89%	89%

Table 7.13 Predicted correctly per model, background variables

As can be seen in table 7.14, the difference in the ranking of the channels is significant for both men and women. Women change the ranking of only two channels: telephone and mobile Internet, where men change the ranking of three channels, implying more multichannel dynamics.

	BEFORE THE EXPERIMENT		AFTER THE EXPERIMENT	
	male	female	male	female
face-to-face	3.07	3.09	3.12	3.13

telephone	2.53	2.66	2.71*	2.90*
Internet	1.72	1.58	1.63	1.56
mobile Internet	3.66	3.86	3.37*	3.45*
written communication	4.00	3.93	4.17*	3.96

Table 7.14 Ranking of the channels before and after the experiment, gender

However, as can be seen in table 7.15, the importance scores change only significantly for men (on the attributes easy and when I want). For women the most important attribute remains getting good information; the second most important attribute becomes making the right choice, leaving the attribute easy on a third place (tied with the attribute safety personal information).

Importance scores attributes	BEFORE EXPERIMENT		AFTER EXPERIMENT	
	male	female	male	female
Getting good information	5.82	6.06	5.65	6.03
Making the right choice	5.66	5.83	5.62	5.96
Easy	5.57	5.88	5.85*	5.86
Spending as little time as possible	5.41	5.54	5.58	5.47
When I want	5.49	5.74	5.86*	5.77
Easy communicating	5.47	5.81	5.39	5.73
Having control	5.62	5.82	5.53	5.75
Safety personal information	5.63	5.84	5.57	5.86

Table 7.15 Importance scores attributes before and after the experiment, gender

This raises the question what causes the women to change the ranking as the importance scores do not change significantly? They even change the ranking for mobile Internet more positively than men, as is shown in table 7.16.

% of respondents (not) changing the ranking of the mobile Internet channel	male	female
Increase	34%	36%
Decrease	16%	11%
Unchanged	50%	53%

Table 7.16 Change of the ranking of the mobile Internet, gender

In the evaluation of the mobile Internet (table 7.17) there is hardly any difference between the scores of men and women. Women are also most satisfied on the strongest attribute of mobile Internet: when I want.

	Mean score (worse/better than expected)		Percentage that scores better than expected	
	male	female	male	female
Getting good information	3.59	3.43	27%	28%
Making the right choice	4.09	3.86	40%	38%
Easy	4.46	4.67	52%	61%
Spending as little time as possible	4.39	4.59	48%	60%
When I want	5.38	5.46	66%	75%
Easy communicating	3.60	3.33	27%	22%
Having control	4.27	4.19	41%	44%
Safety personal information	3.75	3.58	24%	27%
OVERALL SATISFACTION (1 low – 7 high)	4.54	4.71	61%	63%

Table 7.17 Evaluation of the mobile Internet, gender

The differences between the sexes might be explained by the difference in experience with the mobile Internet. This argument is in line with research of Hoeffler and Ariely (1999), who argue that an experienced consumer and an inexperienced consumer have different decision making processes. The inexperienced consumers construct their preferences; if they have experience their preferences will stabilize. This is caused by a better understanding of the attributes that are important for the decision and a "better identification of the importance to place on the attribute when making the purchase decisions" (p. 114). This can be used as an explanation for the change of the preferences for the inexperienced respondents. In table 7.18 the experience with mobile Internet and purchasing travel insurance per group is given.

	No experience mobile Internet	No experience purchasing travel insurance
male	70%	35%
female	74%	43%
low educated	72%	63%[**]
middle educated	76%	39%[**]
high educated	78%	19%[**]
< 25 years	65%[**]	74%[**]
25 – 45 years	61%[**]	28%[**]
45 years and older	88%[**]	25%[**]

Table 7.18 Experience with mobile Internet and travel insurance, background variables

Significant differences are found for the age groups and for the educational groups with regard to experience purchasing travel insurance. The differences for men and women are not significant,

although women have less experience in both areas. This means the level of experience is not an explanation for the found differences between men and women. Finding an explanation will be continued in the next section of this chapter. In this paragraph the other relevant background variables will be discussed: age and education.

The variable age has been recoded into three classes (instead of the original six) to make comparisons more easily possible.

	BEFORE THE EXPERIMENT			AFTER THE EXPERIMENT		
	< 25 years	25 – 45 years	45 years and older	< 25 years	25 – 45 years	45 years and older
face-to-face	3.22	2.86	3.24	3.39	2.96	3.11
telephone	2.65	2.65	2.46	2.91*	2.85*	2.66*
Internet	1.37	1.73	1.76	1.37	1.58	1.78
mobile Internet	3.67	3.54	4.07	3.07*	3.33	3.71*
written communication	4.07	4.28	3.54	4.26*	4.26	3.75

Table 7.19 Ranking of the channels before and after the experiment, age

Based on the changes in the preference scores, the model predicts that there are also significant changes in the importance scores. Table 7.20 confirms this prediction.

	BEFORE EXPERIMENT			AFTER EXPERIMENT		
	< 25 years	25 – 45 years	45 years and older	< 25 years	25 – 45 years	45 years and older
Getting good information	5.83	5.94	5.97	5.65	5.85	5.92
Making the right choice	5.48	5.75	5.89	5.50	5.83	5.91
Easy	5.52	5.56	5.99	5.69	5.75	6.09
Spending as little time as possible	5.43	5.41	5.54	5.63	5.48	5.51
When I want	5.22	5.75	5.70	5.72*	5.72	6.00*
Easy communicating	5.35	5.48	5.96	5.15	5.60	5.76
Having control	5.50	5.68	5.88	5.43	5.85*	5.54*
Safety personal information	5.74	6.02	5.38	5.91	5.85	5.41

Table 7.20 Importance scores of the attributes before and after the experiment, age

The differences between the three age groups are interesting:
   • Younger than 25 years. This group changes the scores of three channels significantly: telephone, mobile Internet and written communication. The only importance score that changes significantly is the attribute when I want. It seems that this group views this attribute as a more or less new feature, which changes the attractiveness of the telephone channel and

the written communication channel negatively and changes the attractiveness of the mobile Internet channel positively. They act as is predicted by EBA (as well as the multi attribute models): increasing the importance of the attractive feature of the mobile Internet to change their attitudes towards the channels. The Internet is a stable number one channel; the others change (partly) positions.

• Age 25 to 45 years. This group changes significantly the ranking of the telephone channel (becoming less popular). Interestingly the only attribute that changes significantly is control, that becomes more important. The reasoning behind the changes might be that this group has experiences with all channels and sees some advantage of the mobile Internet over the telephone channel (more control). They might be characterized as more rational decision makers. Remarkable for this group is that the attribute safety becomes less important and easy becomes more important. These changes are not significant, but they are in line with the expectation that this group behaves more rational than the younger age group.

• Age 45 years and older. This group seems to change the mobile Internet for the telephone channel, with rather stable preferences for the other channels. The advantage of mobile Internet, when I want, seems very important for this group. They score after the experiment 6.00 on the 7-point scale. Contrary to the 25 – 45 years age group they find control less important after the experiment. Combined with the increase in the importance score of when I want, the result is the same.

The third background variable is educational level. In line with the previous, table 7.21 shows the preferences before and after the experiment. Only for the middle and higher educational level are the changes significant.

	BEFORE THE EXPERIMENT			AFTER THE EXPERIMENT		
	low level	middle level	high level	low level	middle level	high level
face-to-face	2.77	3.09	3.33	2.78	3.29*	3.26
telephone	2.62	2.60	2.54	2,79	2.89*	2.72
Internet	1.91	1.53	1.56	1.75	1.47	1.59
mobile Internet	3.61	3.81	3.82	3.38	3.23*	3.58*
written communication	4.12	3.99	3.82	4.29	4.13	3.86

Table 7.21 Ranking of the channels before and after the experiment, educational level

Based on these scores, it is expected that the middle and high level educated have changed their importance scores. Table 7.22 makes it clear that this only applies to the higher educated group; they 'behave' conform the EBA by increasing the importance of the attributes easy and when I want.

	BEFORE EXPERIMENT			AFTER EXPERIMENT		
	low level	middle level	high level	low level	middle level	high level
Getting good information	6.08	6.17	5.59	5.84	5.96	5.69
Making the right choice	5.72	5.91	5.60	5.67	5.96	5.69
Easy	5.94	5.64	5.58	5.94	5.86	5.79*

Spending as little time as possible	5.50	5.41	5.49	5.54	5.64	5.42
When I want	5.50	5.67	5.63	5.65	5.93	5.86*
Easy communicating	5.83	5.50	5.58	5.63	5.64	5.38
Having control	5.72	5.61	5.79	5.65	5.57	5.67
Safety personal information	6.08	5.64	5.51	5.92	5.77	5.47

Table 7.22 Importance scores of the attributes before and after the experiment, educational level

Based on the model the significant increase of the importance of the attributes easy and when I want among the high level educated respondents can explain the rise in the ranking of the mobile Internet. This is according to the EBA model. The low level educated respondents behave as well as might be expected: no significant changes in the importance; no significant changes in the ranking of the channels. It is however the results of the middle level educated respondents that deviate from what might be expected.

The analysis of the results on a more detailed level, using the background variables, indicates that the logic of the EBA model cannot be applied to all groups. Women and the lower educated group do not fit into this model. An alternative to the rational decision making models is needed. The next paragraph discusses an alternative approach.

Attraction effect

The attraction or compromise (Wernerfelt, 1995) effect refers to the finding that adding a new alternative to the choice set alters the choice likelihood of the existing alternatives (Pan and Lehmann, 1993). The explanation might be subjective judgments based on the perceived positions of the alternatives in the "perceptual product attribute space" (Pan and Lehmann, 1993; p. 77)[68]. Three effects are mentioned: range, frequency and categorization effects (Huber and Puto, 1983; Pan and Lehmann, 1993). The frequency effect means that if a new brand is positioned between the two existing brands, the perceived difference between the two original brands increases. The range effect suggests that if the new brand is positioned outside the two existing brands, the perceived difference between the two original brands decreases. The categorization effect suggests that if the new brand (C) is positioned closer to one of the two exis1ing brands (for instance brand A), these two brands (A and C) are seen as more similar and the other brand (B) as less similar. Then three possibilities arise (Huber and Pluto, 1983):
- the market shares of brand A and B remain in the same proportion as brand C takes proportionally from A and B;
- adding C has a positive effect on the market share of A, compared to brand B as the new brand takes disproportional market share from brand B (positive similarity effect);
- adding C has a negative effect on the market share of A as the new brand takes disproportional market share from brand A (negative similarity effect).

These effects are used to explain the noticed violations of the regularity hypothesis. This hypothesis states that adding a new alternative cannot increase the probability of choosing one of the other alternatives (Mourali et al., 2007). Adding an asymmetrically dominated alternative violates this hypothesis (Huber, Payne and Puto, 1982; Ratneshwar et al., 1987; Simonson, 1989; Otter et al., 2008)[69]

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68 Wernerfelt (1995) argues that it is consistent with rational decision making by consumers.

69 A special case is adding the option of no choice as an alternative (Dhar, 1997; Dhar and Simonson, 2003; Parker and Schrift, 2011; see also Dhar and Nowlis, 2004).
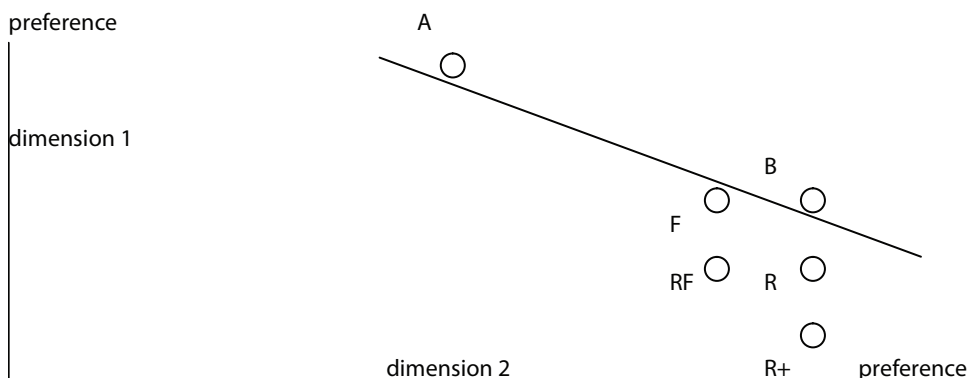
Figure 7.1 Asymmetrically dominated alternative

In this example A is the competitor and B is the target. Adding alternative F means the frequency effect might occur, on the dimension on which B scores best. Alternative R creates a range effect on the dimension on which B scores weakest, R + is an extreme alternative. The result, an increase in the market share of B, is also called the compromise effect. RF includes both effects. In their survey Huber et al. (1982) find that the so called decoy is hardly chosen (2%) and that the range effect produced the highest increase for B (the target). This is also called the attraction effect in which a dominated (on the two dimensions) alternative is added and therewith increasing the market share of the most similar alternative (Simonson, 1989; Simonson and Tversky, 1992; Amaldoss et al., 2008).

It might be assumed that, prior to the research, the mobile Internet is not considered by most of the respondents. Further it might be assumed that respondents normally do not evaluate five channels before making a choice, but in real life only evaluate their two preferred channels. Asking them about the mobile Internet channel can be seen as adding a new channel and might result in attraction effects. Conform the theory the kind of attraction effect depends on the two channels the respondent favors before the experiment and to which the mobile Internet is added. Table 7.23 provides the possible combinations per socio-demographic characteristics.

First two channels before experiment	gender		education			age			experience mobile	
	male	female	low	middle	high	< 25 years	25 – 45 years	45 years and older	no	yes
face-to-face + telephone	15%	12%	21%	10%	10%	4%	19%	15%	14%	10%
face-to-face + Internet	16%	21%	19%	26%	10%	24%	22%	9%	21%	12%
face-to-face + mobile										
face-to-face + written	2%	3%	2%		5%		1%	5%	3%	2%

telephone + Internet	35%	42%	25%	39%	48%	41%	28%	47%	45%	22%
telephone + mobile										
telephone + written	2%		2%		1%	2%		1%	1%	2%
Internet + mobile	22%	19%	29%	19%	17%	24%	27%	12%	10%	48%
Internet + written	9%	2%	2%	7%	8%	4%	3%	11%	6%	5%
mobile + written		1%	2%			2%			1%	

Table 7.23 First two preferred channels before the experiment, back ground variables

The differences per educational level, age group and experience with mobile Internet are significant[70] (chi-square; p < 0.05). There seem to be four major combinations:

- face-to-face with the telephone; scores high among women, low educated and age group 25 -45 years;
- face-to-face with the Internet; scores high with the middle educated and respondents without experience with the mobile Internet, low with the 45+ years;
- telephone and the Internet; biggest combination, scores higher among women, middle educated, respondents with no mobile Internet experience and young and older respondents;
- Internet and mobile Internet; scores high among the low educated and respondents with mobile Internet experience.

In table 7.24 the scores after the experiment are showed. Interestingly only the differences for the group with and without mobile Internet are significant (chi-square, p< 0.05). The differences between men and women are remarkable: women trade more often than men the combination telephone and Internet for Internet and mobile Internet, therewith indicating that they see the mobile Internet more similar to the telephone channel. The combination face-to-face and Internet remains stable.

First two channels after experiment	gender		education			age			experience mobile	
	male	female	low	middle	high	< 25 years	25 – 45 years	45 years and older	no	yes
face-to-face + telephone	12%	8%	18%	7%	8%	4%	11%	15%	12%	5%
face-to-face + Internet	17%	21%	21%	20%	17%	15%	25%	16%	21%	15%

70 Some caution is necessary: there are a relatively large number of cells with a count less than 5.

face-to-face + mobile	1%	1%	3%			2%		1%	1%	
face-to-face + written	3%	3%	2%		6%	2%	3%	4%	2%	5%
telephone + Internet	29%	27%	25%	30%	28%	35%	24%	28%	31%	20%
telephone + mobile		2%		1%	1%			3%	1%	
telephone + written	1%				1%			1%	1%	
Internet + mobile	31%	30%	30%	36%	27%	37%	34%	22%	23%	52%
Internet + written	5%	6%		6%	10%	4%	4%	9%	7%	3%
mobile + written	1%	1%	2%		1%	2%		1%	1%	

Table 7.24 First two preferred channels after the experiment, back ground variables

For the middle educated the increase of the combination Internet and mobile Internet is substantial: from 19% to more than one third of this group, namely 36%. They come from the combination face-to-face/Internet and telephone/Internet. The results in table 7.25 for all groups indicate that the most important switch after using the mobile Internet is choosing the mobile Internet channel above the telephone channel.

		FIRST TWO CHANNELS BEFORE			
FIRST TWO CHANNELS AFTER		face-to-face + telephone	face-to-face + Internet	telephone + Internet	Internet + mobile
face-to-face + telephone		64%	3%	4%	0%
face-to-face + Internet		14%	71%	8%	2%
telephone + Internet		14%	8%	56%	12%
Internet + mobile		4%	5%	26%	84%

Table 7.25 Comparison first two preferred channels before and after the experiment

A similar (though opposite) effect occurs within the group Internet/mobile, where an (probably a negative) experience with the mobile Internet leads to the adoption of the telephone channel. The group Internet/mobile remains most loyal of all the groups to their preferred channels. In figure 7.2 the evaluation of the channels is plotted for the two most important attributes. The number one choice, Internet, scores highest on easy and second on getting good information. Face-to-face scores highest on getting good information, but this is not enough to get the number two position (that is for the telephone channel).
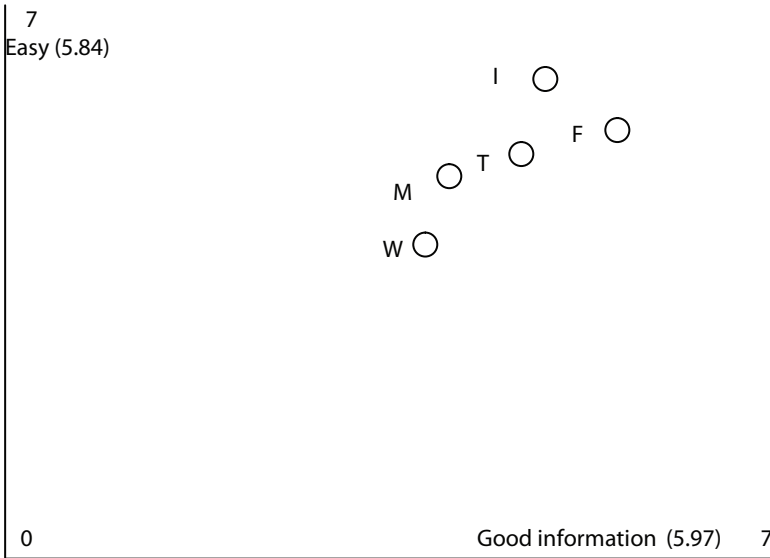
Figure 7.2 Evaluation of the channels on the two most important attributes before the experiment

After the experiment (see figure 7.3) easy is still the most important attribute, but when I want is now the second important attribute. Assuming that most respondents have Internet as the most preferred channel and either face-to-face or the telephone as the second preferred channel, the experiment with the mobile channel results in the increasing importance of the attribute on which the mobile Internet scores highest after the Internet. The mobile Internet is now no longer dominated on both attributes by the telephone and face-to-face channel and this might explain the increase in the ranking scores.
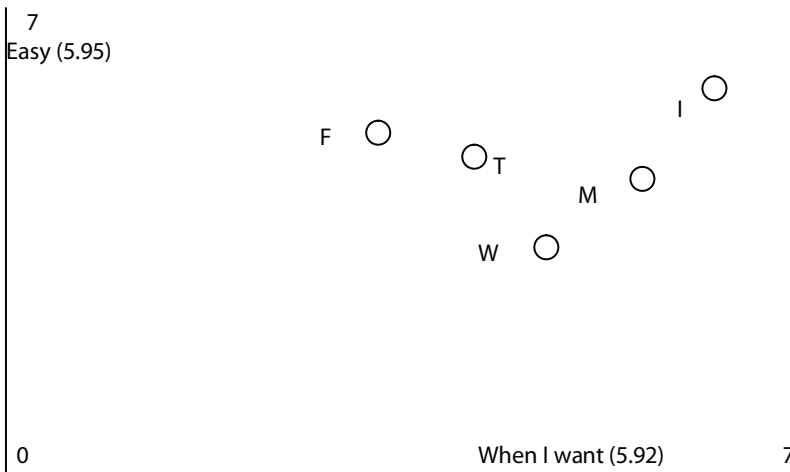
Figure 7.3 Evaluation of the channels on the two most important attributes after the experiment

The combination of EBA and the attraction effect seems an appropriate explanation for the found results. Respondents select their channels by using EBA. In reality they probably do not evaluate five channels, but only two channels. Conducting the experiment changes the importance scores of the attributes and might change the position of the mobile Internet in relation to the telephone and face-to-face channel. This explains the increase of the number two position for the mobile Internet. Especially for respondents who preferred the Internet and the telephone channel this attraction effect occurs.

Cognitive dissonance

Research has shown a correlation between the realism of users' expectation of an IT system and their satisfaction scores (Szajna and Scamell, 1993). This has been explained with the cognitive dissonance theory (cf. Festinger, 1957). The reasoning is as follows: users with unrealistic high expectations will be disappointed by the actual performance; to avoid the cognitive dissonance they will increase their actual performance scores (the satisfaction scores) to decrease the gap between actual and expected performance. User with unrealistic low expectations will lower the satisfaction scores to decrease the gap between actual and expected performance. It has been hypothesized that users with unrealistic high or low expectations will have different satisfaction scores compared to users with realistic expectations. In this research it is difficult to define what unrealistic high or low expectations of the mobile Internet might be. However, a parallel argument can be made regarding low and high expectations. Respondents with high expectations and respondents with low expectations (based on their evaluation of the mobile Internet channel) might differ in their satisfaction scores not (only) because of their actual satisfaction scores, but because they behave according to the cognitive dissonance theory.

To find evidence for this proposition, an analysis has been made with the exclusion of the respondents with prior experience with the mobile Internet. These respondents are excluded because their opinion is based on experience and therefore their expectations are assumed to be more realistic. The respondents are divided into three groups, based on the evaluation scores they give the mobile Internet channel. The average of these 8 scores has been calculated. The negative group has an average score of less or equal to 4; the moderate group has a score greater than 4 and less or equal to 5 and the positive group has a score above 5.

	negative	moderate	positive	experience with mobile Internet
Satisfaction good information	3.22	3.53	3.54	3.67
Satisfaction right choice	3.53	3.84	4.05	4.28
Satisfaction easy	4.47	4.13	4.77	4.77
Satisfaction little time as possible	3.97	4.13	4.62	4.83
Satisfaction when I want	5.81	5.36	5.31	5.38
Satisfaction easy communicating	3.28	3.04	3.64	3.70
Satisfaction control	4.19	3.82	4.39	4.37
Satisfaction safety personal information	3.11[***]	3.64***	3.82***	3.88
General satisfaction	4.14***	4.02***	5.00***	4.93

Table 7.26 Satisfaction with the mobile Internet, per expectation level

In general the respondents that have higher expectations are more satisfied than the group with lower expectations, leading to significant differences[71] for the attribute safety personal information and the general satisfaction score. It is not obvious however whether this is caused by cognitive dissonance as it is not obvious whether these expectations are unrealistic low or high. A comparison with the scores of the group with experience with the mobile Internet shows that this group scores highest on a large number of attributes, which is surprising as it can be argued that this group knows what they will get before the experiment.

7.4   Conclusions

In this chapter some alternative explanations for the results have been explored. An important conclusion is that the statistical significant changes in the attitude of the respondents are not caused by interviewer's bias or experiment bias; control surveys have confirmed this. More difficult is it to answer the question what decision making strategy the respondents have most likely used. As this question is central to this research, the answer is postponed to the final chapter: conclusions, implications (and limitations).

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71   A *** mark in the table refers to statistically significant, Kruskal-Wallis test, p < 0.05.

"Theories are nets cast to catch what we call 'the world'; to rationalize, to explain and to master it. We endeavor to make the mesh even finer and finer."

Popper, 1959; p. 38

CHAPTER 8   CONCLUSIONS, IMPLICATIONS AND LIMITATIONS

8.0   Abstract

The research has shown that the models for explaining the use of a new ICT enabled channel have become more complex. The review of the theories has caused several academic fields to be included to establish a model for explaining consumer behavior. Only part of this model has been confirmed by the fieldwork therewith indicating that the decision making strategies of consumers are too diverse to integrate into one model.

8.1   Introduction

This research has covered a large number of subjects. The main research question has been:

• *What factors explain consumer channel choice in an ICT enabled multichannel configuration, therewith finding an explanation for the trial, adoption and choice of a new channel?*

This main question has led to three sub questions that have been answered in this thesis:

• *Which theories can be used to find the factors that explain the trial, adoption and choice of an ICT enabled channel by customers in a multichannel configuration?*
• *Is it possible to arrive at a model based on these theories that explains the use of an ICT enabled channels?*
• *Can this model be confirmed empirically?*

In the first part of this thesis the focus has been on analyzing the literature to come to a model for explaining multichannel behavior. This has led to a review of theories in a number of academic fields: IS, marketing, behavioral economics, psychology. The context of financial services and the Internet technology has expanded this search into even broader areas. The literature review has led to a model to explain multichannel behavior. The model combines insights from IS theory, marketing theory and decision making theory. The second part of the research, testing the model, started with a review of the TAM constructs PU and PEOU as TAM has been taken as the starting point. This has resulted in a number of qualitative and quantitative surveys. This has eventually led to the composition of a questionnaire that has made it possible to test the model. The inability to confirm some elements of the model has resulted in a number of alternative explanations. In the previous chapters these steps and the results have been described and based on the conclusions per stage in the research the next step has been taken. In this chapter overall conclusions are drawn with regard to the model and the practical implications and further avenues of research are mentioned. The chapter concludes with the limitations of the research.

8.2   The results

Answering the research question

The review of the theories has provided the answer to the first sub question. The approach that has been followed is the use of the large amount of literature on the use of Internet and eCommerce,

that has appeared in the academic journals since 1995. The theories used in this research have been evaluated on their relevance for multichannel behavior in an ICT context. The elements that have to be explained are trial, adoption (continuous use) and the choice between channels. The theories are from several academic fields. The review leads to the conclusion that the Technology Acceptance Model (TAM) and the Expectation Disconfirmation Theory (EDT) are most suitable for explaining trial and adoption of an ICT enabled channel. TAM and EDT explain on an abstract level why a new channel is tried and adopted; the theories provide however no insight in the consumer decision making process. These specific choice models have been absent in the articles about the use of Internet and eCommerce as that research has focused on the reasons why consumers use or do not use the new technology. To included choice the reviewed theories have been expanded with the decision making models in psychology, economics and marketing.

The review of the theories has led to the formulation of a general model to explain multichannel behavior, therewith answering the second sub question. The translation of this model into a questionnaire has led to the conclusion that the TAM constructs PU and PEOU are not suitable as attributes to explain the use of an ICT enabled channel in a consumer behavior context. The relevant attributes that are important for the channel preferences are task and context related. The attributes have to be generated for every specific task and context. This means it is not possible to generate one universal list that applies to multichannel behavior in general. This has implications for multichannel research: skipping the qualitative research can only be done in situations in which the context and the task are comparable. In this thesis the results of the eGovernment research have shown that the context and task for acquiring services may be the same across different type of services. As there is no consensus in the literature about the attributes, these have to be defined by qualitative research, where the laddering method has proven to be a usable method. The general results make clear that the basic assumptions on which the model is based are met: the importance scores of the attributes show that the chosen attributes are important, respondents have a preference ranking for channels and therewith have a channel choice set and respondents are able to evaluate the channels on the attributes, that is the channels score on the attributes conform the expectations.

The answer to the third sub question is not straightforward as the model is only partly confirmed. The Expectation Disconfirmation Theory is confirmed. A more positive or negative experience with the use of the mobile Internet leads to a change in the channel preference choice set in the expected direction; a neutral experience results in no changes in preferences. However, the dynamics that lead to a different preference have not become clear from the experiment. This is caused by the failure of the decision making model as the research has made it clear that consumers use different decision making strategies and that it is not possible to predict the preferred channel with one decision making model. The multi attribute attitude model predicts the choice correctly in more than 40% of the cases; the first choice is predicted in 2/3 of the cases.

This means that an answer to the main research question includes more factors than are incorporated into the model. This is due to the use of more than one decision making model by the respondents and the genuine multichannel configuration, which means that the present preferences influence, because of the attraction effect, the choice of consumers in the future. In general consumer choice is explained by the perceived scores of the channels on the attributes that are important for the consumer. A combination of the multi attribute attitude model and the Elimination By Aspects model seems the best possible explanation, which should also take into regard the attraction effect. In real life consumers probably have only two channels they use regularly. These channels are chosen on their scores on the two or three most important attributes conform the multi attribute attitude model or the EBA model. As a new channel is introduced, as happened with the experiment, the importance scores change. This results in a change in the most important attributes and therewith new positions for the channels on these now most important attributes. The attraction effect might occur and explain why the channel preferences have changed.

Academic contributions

The academic contribution of this study for the IS field has been threefold. First this thesis has provided insight in the relevant theories for explaining technology acceptance from a number of academic fields. This broad review of the potential theories has led to the development of a model that combines the insights from the applied theoretical fields: IS and marketing. The constructs of TAM have been combined with the construct of the consideration set from the marketing literature and the dynamics of the use of a channel have been integrated into the model with the Expectation Disconfirmation Theory (with origin in the marketing academic field as well).

Secondly the thesis has demonstrated the usefulness of several research methods, that have hardly been applied in IS research. Laddering interviews have been used to find insight in the acceptance and adoption of new technologies. Soft laddering and hard laddering interviews resulted in almost similar attributes and end-states. On the consequence level soft laddering resulted in more and more diverse results. Another important difference in results is the relation between attributes, consequences and end-states. In hard laddering these relations are almost linear; in soft laddering these relations are more like a spider-web. Soft laddering is superior to hard laddering when it comes to 'finding' the end states, which is not surprising given the fact that a large number of respondents are consciously unaware of these end states. This means that the choice of the method will depend on the purpose of the research. Thinking aloud protocols have been used to gain insight in the decision making process. In the study it has become clear that the think aloud method is not sufficient to gather the necessary information. Although respondents are able to explain their decision making strategy, they do not elaborate enough on this strategy to make a classification possible. Therefore it in necessary to use for these kind of topics a combination of thinking aloud on one hand and questions and prompting on the other hand.

Thirdly the individual technology adoption research has been expanded with insight in how and why consumers choose across different channels and has led to insight how consumers choose between different competing technologies. This has resulted in an emphasis on the choice process. It can be argued that this expansion might have moved the topic more into the marketing field and might have diminished the role of the IS artefact. Choosing between two technologies (Internet and mobile Internet) is different from deciding to use or not to use a technology. This issue will be discussed in more detail in the paragraph about future research.

The contribution to the marketing research on consumer behavior in multichannel environments has been threefold. Table 8.1 shows some recent research in the marketing journals on multichannel behavior (see also Verhoef et al., 2007; Yang et al., 2013 for an overview). From that table it becomes clear that most research focuses on the information and the purchase stage. The research in this thesis includes the post-purchase stage by means of the experiment. The experiment has shown that preferences do change after experiencing a new channel. It also shows the impact of past behavior on multichannel behavior and therewith the process character of the decision making process. In the marketing literature on multichannel behavior this approach has not been used yet; cross-sectional research still being the most used research form and longitudinal research consisting of the analysis of purchase data of retailers. The research in this thesis shows that the positive experience has consequences for the channel preferences; an outcome not unknown in marketing but not yet used in multichannel research.

The second contribution is to the segmentation possibilities and is caused by the finding that consumers' choices are based on the channel configuration set. The found relevance of the attraction effect means that the segmentation based on one channel should be expanded to a segmentation based on the configuration set with two channels. If one wants to migrate consumers from their

present channel to a new channel, for instance Internet, it is of relevance what their second preferred channel is. Consumers with a preference for the face-to-face channel might differ on their second choice channel. Whether the second preferred channel is Internet or the telephone has important consequences for the arguments that have to be used in the migration strategies of organizations. This segmentation has not been found in the marketing literature yet. Studies (e.g. Neslin et al., 2006) discuss the attributes of the channels but do not integrate this in a configuration set or (e.g. Konus et al., 2008) address the multichannel behavior of consumers during the information and purchase phase but do not segment consumers based on their channel preferences for only the purchase phase. This new base for customer segmentation may be an answer to the many unanswered questions on channel segmentation that still remain (Neslin and Shankar, 2009).

The research also adds to the understanding of multichannel behavior in general by using the mobile Internet as the new channel; a channel that has not been used often in the multichannel marketing studies.. This kind of research has been asked for recently (Dholakia et al., 2010) but it should be noted that the purpose of the model has been to come to factors that explain the use of channels independent of the new technology; a goal that is not uncommon in the consumer research discipline that "places considerable emphasis upon the development of nomothetic theories that are applicable across a wide swath of consumer phenomena" (Dholakia et al., 2010; p. 87).

	STAGES	CHANNELS	RESEARCH METHOD
Dholakia et al., 2005	Purchase	Catalog, Store, Internet	Longitudinal (sales data retailer)
Ansari et al., 2005	Purchase	Catalog, Internet	Longitudinal (sales data retailer)
Van Birgelen et al., 2006	Purchase	Store, Telephone, Internet	Cross sectional
Falk et al., 2007	Purchase	Store, Internet	Cross sectional
McGoldrick and Collins, 2007	Purchase	Catalog, Store, Internet	Cross sectional
Venkatesan et al., 2007	Purchase	Store, Internet	Longitudinal (sales data retailer)
Verhoef et al., 2007	Information, purchase	Catalog, Store, Internet	Cross sectional
Konus et al., 2008	Information, purchase	Catalog, Store, Internet	Cross sectional
Schroder and Zaharia, 2008	Purchase	Catalog, Store, Internet	Cross sectional
Kwon and Lennon, 2009	Purchase	Store, Internet	Cross sectional
Chiu et al., 2011	Information, purchase	Store, Internet	Cross sectional
Avery et al., 2012	Purchase	Store, Catalog, Internet	Longitudinal (sales data retailer)

Table 8.1 Recent marketing studies on multichannel behavior

8.3   Limitations

In answering the research question a large number of steps has been taken in this research. It is obvious that with every step choices have to be made that have an impact on the research. Many choices lead to limitations. In this paragraph a number of these limitations will be mentioned.

Reviewed academic fields

The literature review has started with a focus on the IS literature and has expanded into other academic fields. This approach has left aside a more sociological approach as is common in the study

of social histories of technology, sociology in general and an applied field that can be described as domestication of everyday life technologies (see for some of these perspectives e.g. Postman, 1993; Castells, 1996, 2001; Pantzar, 1997, 2000, 2003; Poster, 2001; Frissen, 2000; Slevin, 2000; Cummings and Kraut, 2002; Haddon, 2006). The reason for the omission of the domestication research is twofold. First the methodologies used in this field have been qualitative in nature (Haddon, 2006). As the purpose of this research is to test a model, a quantitative approach is needed. A second reason is that the explanations found in this research do not provide a theoretical framework that can be used and tested. However the focus on the consumer as a rational decision maker, who uses a rational decision making approach limits this research.

Defining the constructs: the attributes

The focus on the rational decision maker is partly caused by the results from the laddering research. As most important attributes only rational arguments have been mentioned. Social status, emotions (see e.g. Beaudry and Pinsonneault, 2005, for the role of emotions on IT use), the influence of others and related (more sociological oriented) reasons have not been mentioned. It has been noticed that two end-states (compared to the literature on Internet and eCommerce use) are missing in the laddering interviews: social status and enjoyment. This lacking of the end-state enjoyment might be attributed to the nature of financial services; during the laddering interviews it became clear that conducting financial transactions is seen as a necessity. Social status might have some relevance if it is taken into account that the channel choice has become a habit. Subjective norm and status have been found to be of more importance when the behavior is 'new'. When using a new channel, subjective norm and status might have played a role; nowadays this is of no importance in choosing the channel. This would imply that subjective norm is only of importance when trying a new channel and therefore might have become important after conducting the experiment with the mobile Internet. As it has not been included, its relevance is not clear. The laddering methods has its limitations. By selecting only the most mentioned attributes in the laddering interviews, the attributes are limited to what respondents find most important when selecting their presently used channels and it is not taking into account that other attributes might be important when a new channel is introduced.

The research framework: non probability sample and quota sample

Given budget constraints a probability sample has not been possible. Some of the disadvantages of a non probability sample have been countered by using quota sampling. The quota have been based on consumer characteristics that are, according to the literature, of importance for multichannel behavior. It should be noted that these quota are based on variables that are known to be of influence and that can be used while selecting respondents (age, education, gender). Two limitations are of importance. In the first place it is possible that there are other important variables that have not yet been discovered in research. Secondly more psychological consumer characteristics (e.g. perceived risk, trust) that cannot be used while selecting respondents have not been included in the quota sampling.

The research framework: sequence of the questions

The length of the questionnaire has resulted in interviews of about 30 minutes, which is rather long for a face-to-face interview. In the questionnaire only the sequence of the attributes has been alternated. The most time-consuming question, reviewing the five channels on 8 attributes, has been asked every time in the same sequence: face-to-face, telephone, Internet, mobile Internet, written communication. Without an alternation it is not clear whether the sequence of the channels has influenced the results, but it cannot be excluded that the satisficing effect (Malhotra, 2009) has

led respondents to minimize their efforts in answering the questions about the mobile Internet and the written communication channel. This might have resulted in biased answers. The fact that a comparison of the results of the four versions of the questionnaire shows no significant differences (Kruskal-Wallis; $p < 0.05$) in the answers of the four groups with a different sequence in the attributes seems to indicate that the order effect might be low, but it cannot be concluded with certainty from the results.

The research framework: Interviewer's bias

The fieldwork of the surveys has been done mostly by students. This has implications for the reliability of the results as the inter-observer bias might be large. The first survey, the laddering interviews that elicited the most important attributes, has been done by one student, who not only conducted the interviews, but also coded the results of the soft laddering interviews. The choice for this approach is based on the conviction that, if possible, a researcher should not be directly involved in the fieldwork. In this way any bias is avoided. This also applies to the coding of the results. The drawback of this conviction is that the researcher depends heavily on the quality of the interviewer(s). In the laddering interviews the hard laddering interviews gave the opportunity of controlling the coding by the interviewer. This has not led to any diverging opinions, therewith indicating that a control of the soft laddering interviews would not have led to other results. The second qualitative survey, think aloud protocols about the choice for a channel, has been conducted by three students. The coding has been done by the students, but here the results have been checked by the interviewers with the respondents, therewith minimizing the interviewer's bias. Of the interviews a summary for control possibilities has been delivered.

In the quantitative survey 30 interviewers have conducted the interviews. All these interviewers have been briefed personally and were not aware in advance of the topic of the thesis. However, given the experiment, it is not impossible that they guessed the topic and therewith the preferred outcomes. The large number of interviewers has the advantage that any individual interviewer influences the total results only to a limited extend. The disadvantage is that it is hardly possible to check on inconsistencies per interviewer compared to the other interviewers. It should also be noted that differences in the results per interviewer might be expected as the interviewers had different quota groups and the background variables on which these quota groups are based are of influence on the answers. All questionnaires have been data-entried personally and have been checked on inconsistencies.

The model

The central place in this thesis has been for the empirical verification of the model. The model has been the main topic. The consequence of the dominance of the model has been a focus on the confusion matrix to evaluate the (correct) prediction of the preferences. This has led to a limited number of statistical analyses and an emphasis on measurements on an individual level. A different approach might have revealed other extra information, but has been considered outside the scope of this thesis.

The results: statistical analyses

The use of Likert scales (that are according to many authors not measured on an interval level) and the outcomes of the Kolgomorov-Smirnov tests have led to the use of non-parametric statistic tests. These have been used to test whether changes in rankings and importance scores are significant. The use of non-parametric tests might be seen as a strict interpretation of the statistical theory in general. In practice the results of the non-parametric tests hardly differ from the parametric tests

as has been shown in the pilot research (see table 3.13 and table 3.14). The use of non-parametric measures is not possible with the calculations of the weighted additive and simple additive model and some other models. These models treat the variables by definition on an interval level (or even a ratio scale: Schmidt and Wilson, 1975). This inconsistency might explain why the models do not outperform other decision making models. It is however the only way to calculate the predictive power of the models.

The results: alternative explanations

As the results have not confirmed the model some alternative explanations have been mentioned and explored. This exploration has been done within the limits of this research as the purpose has been to test the developed model. Although these alternative explanations might give insight in the decision making process of consumers when choosing a channel, it is clear that the research has been constructed to test other models. Therefore the EBA model and the attraction effect are only mentioned as possibilities; a persuasive statistical analysis is not provided.

The research paradigm

The positivist paradigm is very popular in IS research (Goles and Hirschheim; 2000; Chen and Hirschheim, 2004; Mingers, 2004; Mingers and Willcocks, 2004) and characterizes "the work of many North American academics" (Straub et al., 2004; p. 381) although recent research indicates that "Information Systems Research is moving away from the normative/positivistic paradigm associated with 'hard-oriented' methodologies" (Paucar-Caceres and Wright, 2011; p. 598). This research has been conducted within the positivist research paradigm. This has consequences for epistemological questions as: how is theory constructed, how is it tested, what research methods are used (Gregor, 2006; see for a post-positivist review of TAM: Silva, 2007). To give just one example: although qualitative methods (laddering interviews, thinking aloud protocols) have been used, the emphasis has been on testing the model in a quantitative survey and the conclusions have been based on these quantitative analyses. Conducting research in the positivist paradigm limits the research in many ways.

8.4   Practical implications and further research

Organizations have to study the behavior of their (potential) customers with regard to channel use for several tasks and contexts. This is the only way to gain insight in the motives of their customers. The research has shown that it is impossible to generate the important channel attributes for all tasks and contexts. This implies that the attributes that are important in choosing a channel are different for every situation (context, task and product/service dependent). Without the elicitation of the proper attributes the multi attribute model or the EBA model make no sense.

A second implication of the findings is that channel migration strategies have to be based on the present preferences. Consumer segmentation should be based on their channel preferences and not on their socio demographic background. To state it differently: it is more important to know the channel configuration set than the gender of the consumer to come to an effective channel management strategy. Based on the present preferences it is possible to promote a new channel (for instance mobile Internet) effectively. Managers in organizations adding a new channel to their marketing channels have to realize that the trial and adoption of this new channel depends on a large number of factors. The new channel will have to compete with the most popular channels and will have to outperform them on one of the most important attributes. The multichannel configuration (the most preferred channels) will differ per consumer group. Table 8.2 shows the two most preferred channels of the respondents. It is obvious that the motivation to switch to the

mobile channel will be different for respondents preferring the face-to-face and the Internet channel compared to respondents preferring the telephone and the Internet channel. Managers will have to take this configuration into account and not only focus on the channels consumers use.

Face to face + telephone	Face to face + Internet	Face to face + mobile	Face-to-face + written	Telephone +Internet	Telephone + mobile	Telephone + written	Internet + mobile	Internet + written	Mobile + written
13%	16%	0%	2%	40%	1%	1%	19%	6%	1%

Table 8.2 Multichannel configurations

Although a new wave of TAM related research appears (see table 8.3) every time a new technology is introduced[72], TAM is not suitable for studying multichannel consumer behavior. This is partly caused by the complexity of human decision making and the use of several (different) decision making strategies and partly caused by the specific characteristics of multichannel behavior. This contrasts with the origin of TAM: explaining the use of IS in the workplace.

SUBJECT	AUTHOR(S)	JOURNAL
Impact of selling approaches on acceptance of technology products	Elliott and Fu, 2008	Marketing Management Journal
Online education	Gibson et al., 2008	Journal of Education for Business
Web-based training	Hashim, 2008	International Journal of Training and Development
Hotel front office	Kim et al., 2008	Tourism Management
Mobile booking service	Wang and Llao, 2008b	CyberPsychology & Behavior
Multimedia messaging services	Wang et al., 2008	Journal of Consumer behavior
Mobile TV	Jung et al., 2009	Computers in Human Behavior
Accessibility of websites for consumers with visual impairments	Kaufman-Scarborough and Childers, 2009	Journal of Public Policy & Marketing
Electronic Medical Records	Seeman and Gibson, 2009	SAM Advanced Management Journal
Digital Music Players	Song et al., 2009	Journal of Product Innovation Management
Multipurpose information systems	Gu et al., 2010	Cyberpsychology, Behavior, and Social Networking
Dynamic product imagery	Kim and Forsythe, 2010	The International Review of Retail, Distribution and Consumer Research
Mobile recommendation agents	Kowatsch and Maass, 2010	Computers in Human Behavior
Mass-customized newspapers	Putzke et al, 2010	Journal of Media Economics
eMarketing	Taylor and Strutton, 2010	Journal of Business Research

72 Recently it even has been stated that "TAM has been applied increasingly to the different elements of the marketing mix" (Haenlein and Kaplan, 2011; p. 153) and TAM is said to be in the middle of the growth stage regarding published articles in marketing journals (ibid.).

YouTube	Yang et al, 2010	Cyberpsychology, Behavior, and Social Networking
GPS devices	Chen and Chen, 2011	Expert Systems with Applications
ePayment	Lin and Nguyen, 2011	Journal of Computer Information Systems
Mobile viral marketing	Yang and Zhou, 2011	Journal of Targeting, Measurement and Analysis for Marketing

Table 8.3 Recent publications using TAM

This has been acknowledged by the "founders" of TAM. Davis (as co-author: Venkatesh et al., 2007), answering the question whether technology research is dead, has answered yes, "if the inquiry implies a continuation of replications with no substantive theoretical advance" (p. 268) and Bagozzi (co-author of Davis et al, 1989) has called for a paradigm shift (2007). In consumer research TAM has to be replaced by a model that explains the choice between competing technologies. This is a new area for the IS academic field as the research has been restricted to the acceptance or non acceptance of an IS system in general and an ICT enabled channel in particular. In studying the choice between competing technologies the question can be raised whether it is still relevant to study it within the IS field or whether this topic should be left to the marketing field (cf. Benbasat and Zmud, 2003). What is the relevance of the IS artifact when choosing between two ICT enabled channels? An answer to this question will determine whether in the nearby future multichannel behavior should be studied within the IS academic field and therewith contributing to the discussion about the relevance of IS research in general (see for some discussions e.g. Alter, 2003a, 2003b; Sidorova et al., 2008; Taylor et al. 2010; Constantinides et al., 2012).

The relevant attributes of the channel are dependent on the tasks and contexts of the use of the channel. As mentioned before this means that for every task and context the important attributes have to be elicited. It might be of practical value to create a task/context matrix in which services are classified and to define with qualitative research the relevant attributes per cell in this matrix. In that way these attributes do not have to be generated for every service apart.

A third avenue for further research is the decision making strategies of the consumers. Whether this is a topic for IS research should be evaluated as discussed above, but a better insight in the decision making strategies of the consumers will be of relevance, no matter in which academic field the topic is studied.

The literature used for this research is organized in alphabetical sequence. Per author the publications are listed chronologically. If the first mentioned author is the same, publications with one co-author are shown before publications written with two or more co-authors. This is related to the reference system used in the text, in which a maximum of two authors per publication is mentioned; with three or more authors the first author is mentioned; for the other authors the et al. notation is used. The articles with single and double authors provide no problem; publications with three or more authors can be found with the name of the first author and the year of publication. This system works well with most of the names. However, with new 'household' names in academic research like Lee and Kim it makes it slightly more complicated as the authors are in that case also organized on their initials.

A

Abalo, J., Varela, J. and Manzano, V., (2007), Importance values for Importance-Performance Analysis: A formula for spreading out values derived from preference rankings, *Journal of Business Research*, 60: 115 - 121

Abdul-Muhmin, A.G., (1999), Consumer Decision Behavior: Effect of Number of Alternatives To Be Selected on Consumers' Decision Processes, *Journal of Consumer Psychology*, 8, (1): 91 – 111

Abelson, R.P. and Levi, A., (1985), Decision Making and Decision Theory, in: Lindzey, G. and Aronson, E., (eds.), *The Handbook of Social Psychology*, third edition, Random House, New York, 231 - 311

Abernethy, A.M. and Butler, D.D., (1992), Advertising Information: Services versus Products, *Journal of Retailing*, Vol. 68, No. 4: 398 – 419

Abeyratne, R., (2005), Electronic Ticketing in Air Transport – Commercial Strategies and Consequences, *Journal of World Trade*, 39 (6): 1095 – 1118

Achrol, R.S. and Kotler, P., (2006), The Service-Dominant Logic for Marketing: A Critique, in: Lusch, R.L. and Vargo, S.L. (eds.), *The Service-Dominant Logic Of Marketing,* M.E. Sharpe Inc., New York

Adams, D.A., Nelson, R.R and Todd, P.A., (1992), Perceived Usefulness, Ease of Use, and Usage of Information Technology: A Replication, *MIS Quarterly*, June: 227 - 247

Adamson, I. and Shine, J., (2003), Extending the New Technology Acceptance Model to Measure the End User Information Systems Satisfaction in a Mandatory Environment: A Bank's Treasury, *Technology Analysis & Strategic Management*, Vol. 15, No. 4: 441 – 455

Adner, R., (2002), When are technologies disruptive? A demand-based view of the emergence of competition, *Strategic Management Journal*, 23: 667 – 688

Ahn, T., Ruy, S. and Han, I., (2004), The impact of the online and offline features on the user acceptance of Internet shopping malls, *Electronic Commerce Research and Applications*, 3, 405 – 420

Agarwal, R. and Karahanna, (2000), Time flies when you're having fun: cognitive absorption and beliefs about information technology usage, *MIS Quarterly*, Vol. 24, Issue 4: 665 – 694

Agarwal. R. and Prasad, J., (1998), A Conceptual and Operational Definition of Personal Innovativeness in the Domain of Information Technology, *Information Systems Research*, Vol. 9, no. 2: 204 – 215

Agarwal, R., Rastogi, S. and Mehrotra, A., (2009), Customers' perspectives regarding e-banking in an emerging economy, *Journal of Retailing and Consumer Services*, 16: 340 - 351

Agresti, A. and Finlay, B., (2009), *Statistical Methods For The Social Sciences*, fourth edition, Prentice Hall, Upper Saddle River

Agustin, C. and Singh, J., (2005), Curvilinear Effects of Consumer Loyalty Determinants in Relational Exchanges, *Journal of Marketing Research*, Vol. XLII, February: 96 - 108

Ahn, T., Ruy, S. and Han, I., (2004), The impact of the online and offline features on the user acceptance of Internet shopping malls, *Electronic Commerce Research and Applications*, 3: 405 – 420

Ahtola, O.T., (1975), The Vector Model of Preferences: An Alternative to the Fishbein Model, *Journal of Marketing Research*, vol. XII, February: 52 - 59

Ahuja, M.K. and Thatcher, J.B., (2005), Moving Beyond Intentions and Toward The Theory of Trying: Effects of Work Environment and Gender on Post-Adoption Information Technology Use, *MIS Quarterly*, Vol. 29, No. 3: 427 - 459

Ajzen, I., (1991), The Theory of Planned Behavior, *Organizational Behavior and Human Decision Process*, 50: 179 – 211

Ajzen, I., (2001), Nature and Operation of Attitudes, *Annual Review of Psychology*, 52: 27 - 58

Ajzen, I., (2002a), Perceived Behavioral Control, Self-Efficacy, Locus of Control, and the Theory of Planned Behavior, *Journal of Applied Social Psychology*, 32: 1 – 20

Ajzen, I., (2002b), Residual Effects of Past on Later Behavior: Habituation and Reasoned Action Perspectives, *Personality and Social Psychology Review*, Vol. 6, No. 2: 107 - 122

Ajzen, I., (2006), Constructing a TpB Questionnaire: Conceptual and Methodological Considerations, homepage I. Ajzen, *www.people.umass.edu/aizen*

Ajzen, I., (2008), Consumer Attitudes and Behavior, in: Haugtvedt, C.P., Herr, P.M. and Kardes, F.R., (eds.), *Handbook of Consumer Psychology*, Psychology Press, New York

Ajzen, I. and Cote, N.G., (2008), Attitudes and the Prediction of Behavior, in: Crano, W.D. and Prislin, R., *Attitudes and Attitude Change*, Psychology Press, New York

Ajzen, I. and Fishbein, (1977), Attitude-Behavior Relations: A Theoretical Analysis and Review of Empirical Research, *Psychology Bulletin*, Vol. 84, No. 5: 888 - 918

Ajzen, I. and Fishbein, M., (eds.), (1980), *Understanding Attitudes and Predicting Social Behavior*, Prentice Hall, Englewood Cliffs

Ajzen, I. and Fishbein, M., (1997), Attitude-Behavior Relations: A Theoretical Analysis and Review of Empirical Research, *Psychological Bulletin*, Vol. 84, No. 5: 888 - 918

Ajzen, I. and Fishbein, M., (2005), The Influence of Attitudes on Behavior, in: Albarracín, D., Johnson, B.T. and Zanna, M.P. (eds.): *The handbook of attitudes*, Mahwah, NJ, Erlbaum

Ajzen, I. and Fishbein, M., (2008), Scaling and Testing Multiplicative Combinations in the Expectancy-Value Model of Attitudes, *Journal of Applied Social Psychology*, 38, 9: 2222 – 2247

Ajzen, I. and Madden, T.J., (1986), Prediction of Goal-Directed Behavior: Attitudes, Intentions, and Perceived Behavioral Control, *Journal of Experimental Social Psychology*, 22: 453 – 474

Akinci, S., Atilgan-Inan, E. and Aksoy, S., (2010), Re-assessment of E-S-Qual and E-RecS-Qual in a pure service setting, *Journal of Business Research*, 63: 232 - 240

Al-Aomar, R. and Dweiri, F., (2008), A Customer-Oriented Decision Agent For Product Selection In Web-Based Services, *International Journal of Information Technology & Decision Making*, Vol. 7, No. 1: 35 - 52

Alba, J.W. and Hutchinson, J.W., (1987), Dimensions of Consumer Expertise, (1987) Dimensions of Consumer Expertise, *Journal of Consumer Research*, Vol. 13, March: 411 - 454

Alba, J.W. and Hutchinson, J.W., (2000), Knowledge Calibration: What Consumers Know and What They Think They Know, *Journal of Consumer Research*, Vol. 27: 123 – 156

Alba, J.W., Broniarczyk, Shimp, T.A. and Urbany, J.E., (1994), The Influence of Prior Beliefs, Frequency Cues, and Magnitude Cues on Consumers' Perception of Comparative Price Data, *Journal of Consumer Research*, Vol. 21, September: 219 - 235

Albarracin, D., Wang, W., Li, H. and Noguchi, K., (2008), Structures of Attitudes. Judgments, Memory, and Implications for Change, in: Crano, W.D. and Prislin, R., *Attitudes and Attitude Change*, Psychology Press, New York

Albesa, J.G., (2007), Interaction channel choice in a multichannel environment, an empirical study, *International Journal of Bank Marketing*, Vol. 25, No. 7: 490 – 506

Al-Gahtani, S.S., (2011), Modeling the electronic transactions acceptance using an extended technology acceptance model, *Applied Computing and Informatics*, 9: 47 - 77

Al-Hawari, M., (2006), The effect of automated service quality on bank financial performance and the mediating role of customer retention, *Journal of Financial Service Marketing*, Vol. 10, No. 3: 228 – 243

Al-Hawari, M., Hartley, N. and Ward, T., (2005), Measuring Banks' Automated Service Quality: A Confirmatory Factor Analysis Approach, *Marketing Bulletin*, 16, Article 1: 1 – 19

Allenby, G., Fennell, G., Huber, J., Eagle, T., Gilbride, T., Horsky, D., Kim, J., Lenk, P., Johnson, R., Ofek, E., Orme, B., Otter, T. and Walker, J., (2005), Adjusting Choice Models to Better Predict Market Behavior, *Marketing Letters*, 16, 3,4: 197 – 208

Allison, P., (2002), *Missing Data*, Sage Publications, Thousand Oaks

Almquist, E. and Lee, J., (2009), What Do Customers Really Want?, *Harvard Business Review*, April: 23

Alter, S., (2003a), 18 Reasons Why IT-Reliant Work Systems Should Replace "The IT Artifact" As The Core Subject Matter Of The IS Field, *Communications of the Association for Information Systems,* Vol. 12: 365 – 394

Alter, S., (2003b), The IS Core – XI: Sorting Out Issues About The Core, Scope, And Identity Of The IS Field, *Communications of the Association for Information Systems,* Vol.. 12: 607 – 628

Amaldoss, W., Bettman, J.R. and Payne, J.W., (2008), Biased but Efficient: An Investigation of Coordination Facilitated by Asymmetric Dominance, *Marketing Science*, Vol. 27, No. 5: 903 - 921

Amir, O. and Levav, J., (2008), Choice Construction Versus Preference Construction: The Instability of Preferences Learned in Context, *Journal of Marketing Research*, Vol. XLV, April: 145 - 158

Amit, R. and Zott, C., (2001), Value Creation in E-Business, *Strategic Management Journal*, 22: 493 – 520

Anandarajan, M., Simmers, C. and Igbaria, M., (2000), An exploratory investigation of the antecedents and impact of internet usage: an individual perspective, *Behaviour & Information Technology*, Vol. 19, No. 1: 69 - 85

Anckar, B., (2003), Consumer Intentions in Terms of Electronic Travel Distribution, *e-Service Journal*, Vol. 2, No. 2: 68 – 86

Anders, K. and Simon, H.A., (1993), *Protocol Analysis. Verbal reports as data*, The MIT Press, Cambridge, Massachusetts

Anderson, E.W. and Sullivan, M.W., (1993), The Antecedents and Consequences of Customer Satisfaction for Firms, *Marketing Science*, 12, 2: 125 - 143

Anderson, E.W., Fornell, C. and Rust, R.T., (1997), Customer Satisfaction, Productivity, and Profitability: Differences Between Goods and Services, *Marketing Science*, Vol. 16, No. 2: 129 – 145

Anderson, N.H., (1981), *Foundations of Information Integration Theory*, Academic Press, New York

Anderson, N.H., (1982), *Methods of Information Integration Theory*, Academic Press, New York

Andrews, R.L. and Srinivasan, T.C., (1995), Studying Consideration Effects in Empirical Choice Models Using Scanner Panel Data, *Journal of Marketing Research*, Vol. XXXII, February: 30 - 41

Ansari, A., Mela, C.F. and Neslin, S.A., (2005), Customer Channel Migration, *Working Paper Amos Tuck School of Business, Dartmouth College*

Argyrous, G., (2000), *Statistics for Research*, Sage Publications, London

Arber, S., (2001), Designing samples, in: Gilbert, N. (ed.), *Researching Social Life*, Sage, London

Ariely, D., (2000), Controlling the Information Flow: Effects on Consumer' Decisions Making and Preferences, *Journal of Consumer Research*, Vol. 27, September: 233 – 248

Arnoldus, B.J., (2011), *An Illumination of the Template Enigma*, Ph.D thesis, Technische Universiteit Eindhoven

Assael, H. and Keon, J., (1982), Nonsampling vs. Sampling Errors in Survey Research, *Journal of Marketing*, Vol. 46, Spring: 114 - 123

Aurier, P., Jean, S. and Zaichkowsky, J.L, (2000), Consideration Set Size and Familiarity with Usage Context, *Advances in Consumer Research*, Vol. 27: 307 – 313

Avery, J., Steenburgh T.J., Deighton, J. and Caravella, M., (2012), Adding Bricks to Clicks: Predicting the Patters of Cross-Channel Elasticities Over Time, *Journal of Marketing*, Vol. 76: 96 - 111

Ayanso, A., Lertwachara, K. and Thongpapanl, N., (2009), Technology-Enabled Retail Services And Online Sales Performance, *Journal of Computer Information Systems*, Spring: 102 - 111

Aydin, S. and Özer, G., (2006), How switching costs affect subscriber loyalty in the Turkish mobile

phone market: An exploratory study, *Journal of Targeting, Measurement and Analysis for Marketing*, Vol. 14, 2: 141 - 155

B

Bagozzi, R.P., (1994), Measurement in Marketing Research, in: Bagozzi, R.P., (ed.): *Principle of Marketing Research*, Blackwell, Oxford

Bagozzi, R.P. (2007), The Legacy of the Technology Acceptance Model and a Proposal for a Paradigm Shift, *Journal of the Association for Information Systems*, Vol. 8, Issue 4: 244 -254

Bagozzi, R.P. and Dabholkar, P.A., (1994), Consumer Recycling Goals and Their Effect on Decisions to Recycle: A Means-End Chain Analysis, *Psychology & Marketing,* Vol. 11, (4): 313 – 340

Bagozzi, R.P. and Dholakia, U., (1999), Goal Setting and Goal Striving in Consumer Behavior, *Journal of Marketing*, Vol. 63: 19 – 32

Bagozzi, R.P. and Lee, K.-H., (1999), Consumer Resistance to, and Acceptance of, Innovations, *Advances in Consumer Research*, Vol. 26: 218 – 225

Bagozzi, R.P. and Warshaw, P.R., (1990), Trying to Consume, *Journal of Consumer Research*, Vol. 17, September: 127 – 140

Bagozzi, R.P. and Warshaw, P.R., (1992), An Examination of the Etiology of the Attitude-Behavior Relation for Goal-Directed Behaviors*, Multivariate Behavioral Research*, 27, (4): 601 - 634

Bagozzi, R.P., Baumgartner, H. and Yi, Y., (1992), State versus Action Orientation and the Theory of Reasoned Action: An Application to Coupon Usage, *Journal of Consumer Research*, Vol. 18, March: 505 – 518

Bagozzi, R.P., Bergami, M. and Leone, L, (2003), Hierarchical Representation of Motives in Goal Setting, *Journal of Applied Psychology*, Vol. 88, No. 5: 915 - 943

Bagozzi, R.P., Gürhan-Canli, Z. and Priester, J.R., (2002), *The Social Psychology of Consumer Behaviour*, Open University Press, Maidenhead

Bagozzi, R.P., Wong, N., Abe, S. and Bergami, M., (2000), Cultural and Situational Contingencies and the Theory of Reasoned Action: Application to Fast Food Restaurant Consumption, *Journal of Consumer Psychology*, 9, (2): 97 – 106

Bagozzi, R.P., Yi, Y. and Phillips, L.W., (1991), Assessing Construct Validity in Organizational Research, *Administrative Science Quarterly*, 36: 421 – 458

Baier, D. and Stüber, E., (2010), Acceptance of recommendations to buy in online retailing, *Journal of Retailing and Consumer Services*, Vol. 17, Issue 3: 173 - 180

Baker, M.J., (2002), Sampling, *The Marketing Review*, 3: 103 - 120

Bakos, J.Y., (1991), A Strategic Analysis of Electronic Marketplaces, *MIS Quarterly*, September: 295 – 310

Balabanis, G. and Vassileiou, S., (1999), Some Attitudinal Predictors of Home-Shopping through the Internet, *Journal of Marketing Management*, 15: 361 - 385

Balasubramanian, S., Raghunathan, R. and Mahajan, V., (2005), Consumers in a multichannel environment: product utility, process utility and channel choice, *Journal of Interactive Marketing*, Vol. 19, No. 2: 12 – 30

Ball, D., (2003), Review: Statistical Analysis With Missing Data, *Journal of Marketing Research*, August: 374

Ballantyne, R., Warren, A., and Nobbs, K., (2006), The evolution of brand choice, *Brand Management*, Vol. 13, No. 4/5: 339 - 352

Bandura, A., (1986), *Social foundations of thought and action: A social cognitive theory*, Prentice-Hall, Englewood Cliffs

Bandura, A., (1988), Organisational Applications of Social Cognitive Theory, *Australian Journal of Management*, Vol. 13, No. 2: 275 – 302

Bandyoppadhyay, K., (2007), The Effect Of Culture On User Acceptance Of Information Technology, *Communications of the Association for Information Systems*, Vol. 19: 522 - 543

Bargh, J.A., (2002), Losing Consciousness: Automatic Influences on Consumer Judgment, Behavior, and Motivation, *Journal of Consumer Research*, Vol. 29, September: 280 – 285

Barkhi, R., Belanger, F., Hicks, J., (2008), A model of the determinants of purchasing from virtual stores, *Journal of Organizational Computing and Electronic Commerce*, Vol. 18, Issue 3: 177 - 196

Barney, J.B., (1991), Firm Resources and Sustained Competitive Advantage, *Journal of Management*, Vol. 17, No. 1: 99 – 120

Barney, J.B., (2001), Is The Resource-Based "View" A Useful Perspective For Strategic Management Research? Yes, *Academy of Management Review*, Vol. 26, No. 1: 41 - 56

Barney, J.B., (2002), *Gaining and sustaining competitive advantage*, Prentice Hall, Upper Saddle River

Barney, J.B., Wright, M. and Ketchen Jr., D.J., (2001), The resource-based view of the firm: Ten years after 1991, *Journal of Management*, 27: 625 - 641

Barney, J.B. and Zajac, E.J., (1994), Competitive Organizational Behavior: Toward an Organizationally-Based Theory of Competitive Advantage*, Strategic Management Journal*, Vol. 15, Special Issue, Winter: 5 – 9

Baron, J. (1988), *Thinking and Deciding*, Cambridge University Press, Cambridge

Barsh, J., Crawford, B. and Grosso, C., (2000), How e-tailing can rise from the ashes, *The McKinsey Quarterly*, number 3: 98 – 109

Bart, Y. Shankar, V., Sultan, F. and Urban, G.L., (2005), Are the Drivers and Role of Online Trust the Same for All Web Sites and Consumers? A Large-Scale Exploratory Empirical Study, *Journal of Marketing*, Vol. 69, October: 133 – 152

Bass, F.M., (1972), Fishbein and Brand Preference: A Reply, *Journal of Marketing Research*, Vol. IX, November: 461

Bass, F.M., (1974), The Theory of Stochastic Preference and Brand Switching, *Journal of Marketing Research*, Vol. XI, February: 1 – 20

Bass, F.M. and Talarzyk, W.W., (1972), An Attitude Model for the Study of Brand Preferences, *Journal of Marketing Research*, Vol. IX, February: 93 - 96

Bass, F.M. and Wilkie, W.L., (1973), A Comparative Analysis of Attitudinal Predictions of Brand Preference, *Journal of Marketing*, Vol. X, (August): 262 – 269

Bass, F.M., Pessemier, E.A. and Lehmann, D.R., (1972), An Experimental Study Of Relationships Between Attitudes, Brand Preference, And Choice, *Behavioral Science*, 17, 6: 532 - 541

Bassi, F., (2011), Latent class analysis for marketing scale development, *International Journal of Market Research*, Vol. 53, Issue 2: 209 – 230

Basu, A. and Muylle, S., (2011), Assessing and enhancing e-business processes, *Electronic Commerce Research and Applications*, 10: 437 - 449[73]

Bateson, J.E.G., (1985), Self-Service Consumer: An Exploratory Study, *Journal of Retailing*, Vol. 61, No. 3: 49 – 76

Batra, R., Homer, P.M. and Kahle, L.R., (2001), Values, Susceptibility to Normative Influence, and Attribute Importance Weights: A Nomological Analysis, *Journal of Consumer Psychology*, 11, (2): 115 – 128

Batsell, R.R. and Polking, J.C., (1985), A New Class Of Market Share Models, Marketing Science, Vol. 4, No. 3: 177 - 198

Baucells, M., Carrasco, J.A. and Hogarth, R.M, (2008), Cumulative Dominance and Heuristic Performance in Binary Multiattribute Choice, *Operations Research*, Vol. 56, No. 5: 1289 – 1304

Baumgartner, H. and Homburg, C., (1996), Applications of structural equation modeling in marketing and consumer research: A review, *International Journal of Research in Marketing,* 13: 139 – 161

Baym, N.K. and Markham, A.N., (2009), Making Smart Choices on Shifting Ground, in: Markham, A.N. and Baym, N.K. (eds.), *Internet Inquiry*, Sage, Thousand Oaks

Beach, L.R. and Mitchell, T.R., (1978), A Contingency Model for the Selection of Decision Strategies, *Academy of Management Review*, July: 439 - 449

---

73 In the article the last pages are mis numbered as pages 498 and 499.

REFERENCES

Beadry, A. and Pinsonneault, A., (2005), Understanding User Responses To Information Technology: A Coping Model of User Adaptation, *MIS Quarterly*, Vol. 29, No. 3: 493 – 524

Bech-Larsen, T., (2001), Model-based development and testing of advertising messages: a comparative study of two campaign proposals based on the MECCAS model and a conventional approach, *International Journal of Advertising*, 20: 499 - 519

Bechwati, N.N. and Xia, L., (2003), Do Computers Sweat? The Impact of Perceived Effort of Online Decision Aids on Consumers' Satisfaction With the Decision Process, *Journal of Consumer Psychology*, 13, 1&2: 139 – 148

Beckwith, N.E. and Lehmann, D.R., (1973), The Importance of Differential Weights in Multiple Attribute Models of Consumer Attitude, *Journal of Marketing Research*, Vol. 10, No. 2: 141 - 145

Bélanger, F. and Carter, L., (2008), Trust and risk in e-government adoption, *Journal of Strategic Information Systems*, 17: 165 – 176

Beldad, A., De Jong, M. and Steehouder, M., (2010), How shall I trust the faceless and the intangible? A literature review on the antecedents of online trust, *Computers in Human Behavior*, 26: 857 - 869

Ben-Akiva, M. and Boccara, B., (1995), Discrete choice models with latent choice sets, *International Journal of Research in Marketing*, 12: 9 - 24

Benbasat, I. and Barki, H. (2007), Qua Vadis, TAM?, *Journal of the Association for Information Systems*, Vol. 8, Issue 4: 211 – 218

Benbasat, I. and Zmud, R.W., (1999), Empirical Research in Information Systems: The Practice of Relevance, *MIS Quarterly*, Vol. 23, No. 1: 3 - 16

Benbasat, I. and Zmud, R.W., (2003), The Identity Crisis Within the IS Discipline: Defining and Communicating the Discipline's Core Properties, *MIS Quarterly*, Vol. 27, No. 2: 183 - 194

Bendoly, E., Blocher, J.D., Bretthauer, K.M., Krishnan, S. and Venkataramanan, M.A., (2005), Online/In-Store Integration and Customer Retention, *Journal of Service Research*, Vol. 7, No. 4: 313 - 327

Benslimane, Y., Plaisent, M. and Bernard, P., (2003), Applying the Task Technology Fit Model to WWW-based Procurement: Conceptualization and Measurement, in: *Proceedings of the 36th Hawaii International Conference on System Sciences* (HICSS'03), IEEE

Bentler, P.M., (2010), SEM with simplicity and accuracy, *Journal of Consumer Psychology*, 20: 215 - 220

Berander, P., (2004), Using Students as Subjects in Requirement Prioritization, in: *Proceedings of the 2004 International Symposium on Empirical Software Engineering (ISESE'04)*, IEEE

Berg, B.L. and Lune, H., (2009), *Qualitative Research Methods for the Social Sciences*, eight edition, Pearson, Boston

Berry, L.L., (1986), Retail Businesses Are Service Businesses, *Journal of Retailing*, Vol. 62, No. 1: 3 - 6

Betsch, T. and Haberstroh, S., (2005), Preface, in: Betsch, T. and Haberstroh, S. (eds.), *The Routines Of Decision Making*, Lawrence Erlbaum Associates, Mahwah

Bettman, J.R., (1970), Information Processing Models of Consumer Behavior, *Journal of Marketing Research*, Vol. VII, August: 370 - 376

Bettman, J.R., (1971), The Structure of Consumer Choice Processes, *Journal of Marketing Research*, Vol. VIII, November: 465 – 471

Bettman, J.R., (1974), To Add Importance Or Not To Add Importance: That Is The Question, *Advances in Consumer Research*, Vol. 1, Issue 1: 291 – 301

Bettman, J.R. and Park, C.W., (1980), Implications Of A Constructive View Of Choice For Analysis Of Protocol Data: A Coding Scheme For Elements Of Choice Processes, *Advances in Consumer Research*, Vol. 7: 148 -153

Bettman, J.R. and Zins, M.A., (1977), Constructive Processes in Consumer Choice, *Journal of Consumer Research*, Vol. 4, September: 75 - 85

Bettman, J.R., Capon, N. and Lutz, R.J., (1975a), Cognitive Algebra in Multi-Attribute Attitude Models, *Journal of Marketing Research*, Vol. XII, May: 151 – 164

Bettman, J.R., Capon, N. and Lutz, R.J., (1975b), Multiattribute Measurement Models and Multiattribute Attitude Theory: A Test of Construct Validity, *Journal of Consumer Research*, Vol. 1, March: 1 - 15

Bettman, J.R., Capon, N. and Lutz, R.J., (1975c), A Multimethod Approach To Validating Multi-Attribute Attitude Models, *Advances in Consumer Research*, Vol. 2, Issue 1: 357 – 374

Bettman, J.R., Johnson, E.J. and Payne, J.W., (1991), Consumer Decision Making, in: Robertson, T.S. and Kassarjian, H.H., (eds.), *Handbook of Consumer Behavior*, Prentice Hall, Englewood Cliffs, New Jersey

Bettman, J.R., Kassarjian, H.H. and Lutz, R.J., (1978), Consumer Behavior, *Review of Marketing*, American Marketing Association, Chicago, pp. 194-229

Bettman, J.R., Luce, M.F. and Payne, J.W., (1998), Constructive Consumer Choice Processes, *Journal of Consumer Research*, Vol. 25, December: 187 – 217

Bettman, J.R., Luce, M.F. and Payne, J.W., (2008), Preference construction and preference stability: Putting the pillow to rest, *Journal of Consumer Psychology*, Vol. 18, Issue 3: 170 - 174

Bhattacherjee, A., (2001a), Understanding Information Systems Continuance: An Expectation-Confirmation Model, *MIS Quarterly*, Vol. 25, No. 3: 351 – 370

Bhattacherjee, A., (2001b), An empirical analysis of the antecedents of electronic commerce service continuance, *Decision Support Systems*, 32: 201 – 214

Bhattacherjee, A., (2002), Individual Trust in Online Firms: Scale Development and Initial Test, *Journal of Management Information Systems*, Vol. 19., No. 1: 211 – 241

Bhattacherjee, A. and Harris, M., (2009), Individual Adaptation Of Information Technology, *Journal of Computer Information Systems*, Fall: 37 - 45

Bhattacherjee, A. and Premkumar, G., (2004), Understanding Changes in Belief and Attitude Toward Information Technology Usage: A Theoretical Model and Longitudinal Test, *MIS Quarterly*, Vol. 28, No. 2: 229 - 254

Bhattacherjee, A. and Sanford, C., (2006), Influence Processes for Information Technology Acceptance: An Elaboration Likelihood Model, *MIS Quarterly*, Vol. 30, No. 4: 805 - 825

Biemans, W.G., (2000), *Business Marketing Management*, Wolters Noordhoff, Groningen

Biehal, G. and Chakravarti, D., (1982a), Experiences with the Bettman-Park Verbal Protocol Coding Scheme, *Journal of Consumer Research*, Vol. 8, March: 442 - 448

Biehal, G. and Chakravarti, D., (1982b), Information-Presentation Format and Learning Goals as Determinants of Consumers' Memory Retrieval and Choice Processes, *Journal of Consumer Research*, Vol. 8, March: 431 – 441

Biehal, G. and Chakravarti, D., (1989), The Effects of Concurrent Verbalization on Choice Processing, *Journal of Marketing Research*, Vol. XXVI, February: 84 – 96

Birnbaum, M.H., (1973), The Devil Rides Again: Correlation As An Index Of Fit, *Psychological Bulletin*, Vol. 79 No. 4: 239 - 242

Birnbaum, M.H., (1999, Testing Critical Properties Of Decision Making On The Internet, *Psychological Science*, Vol. 10, No. 5, September: 399 - 407

Birnbaum, M.H., (2004), Human Research and Data Collection, *Annual Review of Psychology*, 55: 803 - 832

Biswas, D. and Biswas, A., (2004), The diagnostic role of signals in the context of perceived risks in online shopping: do signals matter more on the web, *Journal of Interactive Marketing*, Vol. 18, No. 3: 30 – 45

Bitner, M.J., (1992), Servicescapes: The Impact of Psychical Surroundings on Customers and Employees, *Journal of Marketing*, Vol. 56 (April): 57 – 71

Bitner, M.J., Ostrom, A.L. and Meuter, M.L., (2002), Implementing successful self-service technologies, *Academy of Management Executive*, Vol. 16, No. 4: 96 – 108

Black, N.J., Lockett, A., Ennew, C., Winklhofer, H. and McKechnie, S., (2002), Modelling consumer choice of distribution channels: an illustration from financial services, *International Journal of Bank Marketing*, 20, 4: 161 – 173

Black, N.J., Lockett, A., Winklhofer, H. and Ennew, C., (2001), The adoption of Internet financial

services: a qualitative study, *International Journal of Retail & Distribution Management*, Vol. 29, Number 8: 390 - 398

Blackwell, R.D., Miniard, P.W. and Engel, J.F., (2001), *Consumer Behavior*, ninth edition, South-Western, division of Thomson Learning, Mason, Ohio

Blalock, H.M. jr., (1960), *Social Statistics*, McGraw-Hill Book Company, New York

Bodily, S. and Venkataraman, S., (2004), Not walls, windows: capturing value in the digital age, *Journal of Business Strategy*, Vol. 25, no. 3: 15 – 25

Bohner, G. and Wänke, M., (2002), *Attitudes and Attitude Change*, Psychology Press Ltd, East Sussex, United Kingdom

Bolton, R.N., (1991), An Exploratory Investigation Of Questionnaire Pretesting With Verbal Protocol Analysis, *Advances in Consumer Research*, Vol. 18: 558 – 565

Bolton, R.N., (1993), Pretesting Questionnaires: Content Analyses Of Respondents' Concurrent Verbal Protocols, *Marketing Science*, Vol. 12, No. 3: 280 - 303

Boonstra A., (2005), *ICT, mensen en organisaties*, tweede editie, PearsonEducation, Amsterdam

Borenstein, S. and Saloner, G., (2001), Economics and Electronic Commerce, *Journal of Economic Perspectives*, Vol. 15, No. 1: 3 – 12

Botschen, G. and Hemetsberger, A., (1998), Diagnosing Means-End Structures to Determine the Degree of Potential Marketing Program Standardization, *Journal of Business Research*, 42: 151 – 159

Botschen, G. Thelen, M.A. and Pieters, R., (1999), Using means-end structures for benefit segmentation: An application to services, *European Journal of Marketing*, Vol. 33 Issue 1-2: 38 - 58

Brace, N., Kemp, R. and Snelgar, R., (2009), *SPSS for Psychologists*, fourth edition, Palgrave Macmillan, Houndsmill, Bastingstoke

Bradley, L. and Stewart, K., (2003), The Diffusion of Online Banking, *Journal of Marketing Management*, 19: 1087 – 1109

Bradlow, E.T., (2005), Current issues and a 'wish list' for conjoint analysis, *Applied Stochastic Models in Business And Industry*, 21: 319 - 323

Branca, A.S., (2008), Demographic influences on behaviour, *International Journal of Bank Marketing*, Vol. 26, No. 4: 237 - 259

Breivik, E. and Supphellen, M., (2003), Elicitation of product attributes in an evaluation context: A comparison of three elicitation techniques, *Journal of Economic Psychology*, 24: 77 - 98

Broekhuizen, T., (2006), *Understanding Channel Purchase Intentions: Measuring Online and Offline Shopping Value Perceptions*, Ph.D thesis, Universiteit Groningen, Labyrinth Publications, Ridderkerk

Brown, G.H., (1947), A Comparison Of Sampling Methods, *Journal of Marketing*, Vol. XI, Number 4: 331 - 337

Brown, S.A. and Venkatesh, V., (2005), Models of Adoption of Technology in Households: A Baseline Model Test and Extension Incorporating Household Life Cycle, *MIS Quarterly*, Vol. 29, No. 3: 399 – 426

Brown, S.A., Dennis, A.R. and Venkatesh, V., (2010), Predicting Collaboration Technology Use: Integrating Technology Adoption and Collaboration Research, *Journal of Management Information Systems*, Vol. 27, No. 2: 9 - 53

Brown, S.A., Venkatesh, V.. Kuruzovich, J. and Massey, A.P., (2008), Expectation confirmation: An examination of three competing models, *Organizational Behavior and Human Decision Processes*, 105: 52 – 66

Brown, S.W., (2000), Chapter 4 in: Fisk, R.P., Grove, S.J. and John, J. (eds.), *Service Marketing Self-Portraits: Introspections, Reflections, and Glimpses from the Experts*, American Marketing Association, Chicago

Brown, T.H., (1938), Scientific Sampling In Business, *Harvard Business Review,* 358 - 368

Browne, G.J., Durrett, J.R. and Wetherbe, J.C., (2004), Consumer reactions toward clicks and bricks: investigating buying behaviour on-line and at stores, *Behaviour & Information Technology,* Vol. 23, No. 4: 237 – 245

Bryman, A., (2012), *Social Research Methods*, fourth edition, Oxford University Press, Oxford

Bryman, A. and Bell, E., (2011), *Business Research Methods*, third edition, Oxford University Press, Oxford

Buijs, A., (1999), *Statistiek om mee te werken*, Educatieve Partners Nederland, Houten

Burke, K.G., Kovar, S.E. and Prenshaw, P.J., (2003), Understanding The Satisfaction Process For New Assurance Services: The Role Of Attitudes, Expectations, Disconfirmation And Performance, *Advances in Accounting*, Vol. 20: 43 - 75

Burton-Jones, A. and Hubona, G.S., (2005), Individual Differences and Usage Behavior: Revisiting a Technology Acceptance Model Assumption, *The Data Base for Advances in Information Systems*, Vol. 36, No. 2: 58 – 77

Büttner, O. and Göritz, A.S., (2008), Perceived trustworthiness of online shops, *Journal of Consumer Behavior*, 7: 35 - 50

C

Cabaniss, R.F., (2003), The effect of asking current consumption questions before or after product evaluation, *Journal of Targeting, Measurement and Analysis for Marketing*, Vol. 12, 2: 185 - 190

Cadotte, E.R., Woodruff, R.B. and Jenkins, R.L., (1987), Expectations and Norms in Models of Consumer Satisfaction, *Journal of Marketing Research*, Vol. XXIV, August: 305 – 314

Cai, S. and Xu, Y., (2008), Designing Product Lists for E-commerce: The Effects of Sorting on Consumer Decision Making, *International Journal of Human-Computer Interaction*, 24, (7): 700 - 721

Calantone, R.J., Griffith, D.A. and Yalcinkaya, G., (2006), An Empirical Examination of a Technology Adoption Model for the Context of China, *Journal of International Marketing*, Vol. 14, No. 4: 1 – 27

Calder, B.J., Phillips, L.W. and Tybout, A.M., (1981), Designing Research for Application, *Journal of Consumer Research*, Vol. 8, September: 197 – 207

Calder, B.J., Phillips, L.W. and Tybout, A.M., (1982), The Concept of External Validity, *Journal of Consumer Research*, Vol. 9, December: 240 - 244

Calisir, F. and Gumussoy, C.A., (2008), Internet banking versus other banking channels: Young consumers' view, *International Journal of Information Management*, 28: 215 – 221

Campbell, J.E., (2009), Response to Lori Kendall, in: Markham, A.N. and Baym, N.K. (eds.), *Internet Inquiry*, Sage, Thousand Oaks

Carlson, B.D. and White, M.A., (2008), Enhancing Stimulus Integration In A Consumer Information Processing System: A Theoretical Foundation, *Marketing Management Journal*, Vol. 18, Issue 2: 154 – 167

Carlson, J.R. and Zmud, R.W., (1994), Channel Expansion Theory: A Dynamic View Of Media And Information Richness Perception, *Academy of Management Best Papers Proceedings*: 280 – 284

Carlson, J.R. and Zmud, R.W., (1999), Channel Expansion Theory And The Experiential Nature Of Media Richness Perceptions, *Academy of Management Journal*, Vol. 42, Issue 2: 153 - 179

Carlson, P.J. and Davis, G.B., (1998), An Investigation of Media Selection Among Directors and Managers: From "Self" to "Other" Orientation, *MIS Quarterly*, September: 335 – 362

Carlson, R., (1971), Where is the person in personality research?, *Psychological Bulletin*, 75: 203 - 219

Carpay, J.A., (1997), *Childhood Epilepsy: Alternative Methods For Assessing Treatment Strategies And Outcome*, Ph.D thesis, Erasmus Universiteit Rotterdam

Carter, L. and Bélanger, F. , (2005), The utilization of e-government services: citizen trust, innovation and acceptance factors, *Information Systems Journal*, 15: 5 – 25

Carter, R.E., Troldahl, V.C. and Schuneman, R.S., (1963), Interviewer Bias in Selecting Households, *Journal of Marketing*, April: 27 – 34

Cases, A., (2002), Perceived risk and risk-reduction strategies in Internet shopping, *The International Review of Retail, Distribution and Consumer Research*, 12:4, October: 375 – 394

REFERENCES

Cassab, H., (2009), Investigating the dynamics of service attributes in multi-channel environments, *Journal of Retailing and Consumer Services*, 16: 25 - 30

Castells, M., (1989), *The informational city*, Blackwell, Oxford

Castells, M., (1996), *The Information Age: Economy, Society and Culture, Volume 1: The Rise of the Network Society*, Blackwell Publishers, Malden, Massachusetts

Castells, M., (2001), *The Internet Galaxy*, Oxford University Press, Oxford

Cattin, P. and Wittink, D.R., (1982), Commercial Use of Conjoint Analysis: A Survey, *Journal of Marketing*, Volume 46, Summer: 44 - 53

Cazier, J.A., Shao, B.B.M. and St. Louis, R.D., (2006), E-business differentiation through value-based trust*, Information & Management*, 43: 718 - 727

CBS, (2005), *De Digitale Economie 2005*, available www.cbs.nl

CBS, (2006), *De Digitale Economie 2004*, available www.cbs.nl

CBS, (2010), *De Digitale Economie 2010*, available www.cbs.nl

Cha, J., (2011), Exploring the internet as a unique shopping channel to sell both real and virtual items: a comparison of factors affecting purchase intention and consumer characteristics, *Journal of Electronic Commerce Research*, Vol. 12, No. 2: 115 - 132

Cha, J., (2012), Usage of video sharing websites: Drivers and barriers, *Telematics and Informatics*, February: 1 - 11

Chaffey, D., (2002), *E-Business and E-Commerce Management*, Pearson Education Limited, Harlow

Chaiken, S. and Stangor C., (1987), Attitudes And Attitude Change, *Annual Review of Psychology*, 1987: 575 – 630

Chakravarti, A., Janiszweski, C. and Ülkümen, G., (2006), The Neglect of Prescreening Information, *Journal of Marketing Research*, Vol. XLIII, November: 642 – 653

Chang, H.H. and Wang, I.C., (2008), An investigation of user communications behavior in computer mediated environments, *Computers in Human Behavior*, 24: 2336 – 2356

Chang, H.-L. and Yang, C.-H., (2008), Do airline self-service check-in kiosks meet the needs of passengers?, *Tourism Management*, 29: 980 - 993

Chang, L. and Krosnick, J.A., (2009), National Surveys Via RDD Telephone Interviewing Versus The Internet, *Public Opinion Quarterly*, Vol. 73, No. 4: 641 - 678

Chang, M.K., Cheung, W. and Lai, V.S., (2005), Literature derived reference models for the adoption of online shopping, *Information & Management*, 42: 543 - 559

Charitou, C.D. and Markides, C.C., (2003), Responses to Disruptive Strategic Innovation, *MIT Sloan Management Review*, Winter: 55 - 63

Chau, P.Y.K. and Lai, V.S.K., (2003), An Empirical Investigation of the Determinants of User Acceptance of Internet Banking, *Journal of Organizational Computing and Electronic Commerce*, 13 (2): 123 – 145

Chau, P.Y.K, Cole, M., Massey, A.P., Montoya-Weiss, M. and O'Keefe, R.M. (2002), Cultural Differences In The Online Behavior Of Consumers, *Communications of the ACM*, Vol. 45, Issue 10: 138 - 143

Chaudhuri, A., (2006), *Emotion and Reason in Consumer Behavior*, Butterworth-Heinemann, Burlington, MA

Chen, C.-F. and Chen, P.-C., (2011), Applying the TAM to travelers' usage intentions of GPS devices, *Expert Systems with Applications*, 38: 6217 – 6221

Chen, C.-H. and Mort, G.S., (2007), Consumers' technology adoption behaviour: an alternative model, *The Marketing Review*, Vol. 7, No. 4: 355 - 368

Chen, L. and Tan, J., (2004), Technology Adaptation in E-commerce: Key Determinants of Virtual Stores Acceptance*, European Management Journal*, Vol. 22, No. 1: 74 - 86

Chen, L., Gillenson, M.L. and Sherell, D.L., (2004), Consumer Acceptance of Virtual Stores: A Theoretical Model and Critical Success Factors for Virtual Stores, *ACM SIGMIS Database*, Volume 35, issue 2: 8 – 31

Chen, P-Y. and Hitt, L.M., (2002), Measuring Switching Costs and the Determinants of Customer Retention in Internet-Enabled Businesses: A Study of the Online Brokerage Industry, *Information Systems Research*, Vol. 13, No. 3: 255 – 274

Chen, W. and Hirschheim, R., (2004), A paradigmatic and methodological examination of information systems research from 1991 to 2001, *Information Systems Journal*, 14: 197 - 295

Cheng, J.M., Sheen, G.-J. and Lou, G.-C., (2006), Consumer acceptance of the internet as a channel of distribution in Taiwan – a channel function perspective, *Technovation*, 26: 856 – 864

Chernev, A., (2005), Context Effects without a Context: Attribute Balance as a Reason for Choice, *Journal of Consumer Research*, Vol. 32, September: 213 - 223

Chernev, A., (2007), Jack of All Trades or Master of One? Product Differentiation and Compensatory Reasoning in Consumer Choice, *Journal of Consumer Research*, Vol. 33, March: 430 – 444

Chiang, W.K., Zhang, D. and Zhou, L., (2006), Predicting and explaining patronage behavior toward web and traditional stores using neural networks: a comparative analysis with logistic regression, *Decision Support Systems*, 41: 514 - 531

Chih-Chung, C. and Chang, S-H., (2005), Discussion on the Behavior Intention Model of Consumer Online Shopping, *Journal of Business and Management*, Vol. 11: 41 – 57

Childers, T.L., Carr, C.L., Peck, J. and Carson, S., (2001), Hedonic and utilitarian motivations for online retail shopping behavior, *Journal of Retailing*, 77: 511 - 535

Chin, W.W. and Todd, P.A., (1995), On the Use, Usefulness, and Ease of Use of Structural Equation Modeling in MIS Research: A Note of Caution, *MIS Quarterly*, June: 237 – 246

Chin, W.W., Johnson, N. and Schwarz, A., (2008), A Fast Form Approach to Measuring Technology Acceptance and Other Constructs, *MIS Quarterly*, Vol. 32, No. 4: 687 - 703

Chircu, A.M. and Kauffman, R.J.,(1999), Analyzing Firm-Level Strategy for Internet Focused Reintermediation, in: *Proceedings of the 32nd Hawaii International Conference on System Sciences*, IEEE

Chiu, C.-M. and Lin, H.-Y., Sun, S.-Y. and Hsu, M.-H., (2009), Understanding customers' loyalty intentions towards online shopping: an integration of technology acceptance model and fairness theory, *Behaviour & Information Technology*, Vol. 28, No. 4: 347 - 369

Chiu, C.-M. and Wang, E.T.G., (2008), Understanding Web-based learning continuance intention: The role of subjective task value, *Information & Management*, 45: 194 – 201

Chiu, H.-C., Hsieh, Y.-C., Roan, J., Tseng, K.-J. and Hsieh, J.-K., (2011), The challenge for multichannel services: Cross-channel free-riding behavior, *Electronic Commerce and Applications,* 10: 268 - 277

Cho, V., (2006), A study of the roles of trust and risks in information-oriented online legal services using an integrated model, *Information & Management*, 43: 502 – 520

Cho, V., Cheng, T.C.E. and Hung, H., (2009), Continued usage of technology versus situational factors: An empirical analysis, *Journal of Engineering and Technology Management,* 26: 264 - 284

Choudhury, V. and Karahanna, E., (2008), The Relative Advantage of Electronic Channels: A Multidimensional View, *MIS Quarterly*, Vol. 32, No. 1: 179 – 200

Chrzan, K., (2009), Decisions, decisions, *Marketing Research*, Summer: 13 – 17

Chrzan, K. and Malcom, D., (2009), How to improve brand tracking research, *International Journal of Market Research*, Vol. 51, Issue 6: 723 - 733

Christensen, C.M., (1997), *The Innovator's Dilemma*, Harvard Business School Press, Boston

Christensen, C.M., (2001), The Past and Future of Competitive Advantage, *MIT Sloan Management Review*, Winter: 105 – 109

Christensen, C.M., Craig, T. and Hart, S., (2001), The Great Disruption, *Foreign Affairs*, Vol. 80, No. 2: 80 - 95

Christensen, C.M. and Tedlow, R.S., (2000), Patterns of Disruption in Retailing, *Harvard Business Review*, January-February: 42 – 45

Chu, W., Choi, B. and Song, M.R., (2005), The Role of On-line Retailer Brand and Infomediary Reputation in Increasing Consumer Purchase Intention, *International Journal of Electronic Commerce*, Vol. 9, No. 3: 115 – 127

Churchill, G.A. jr., (1972), Linear Attitude Models: A Study of Predictive Ability, *Journal of Marketing Research*, Vol. 9, No. 4: 423 – 426

Churchill, G.A. jr., (1979), A Paradigm for Developing Better Measures of Marketing Constructs, *Journal of Marketing Research*, Vol. XVI, February: 64 – 73

Churchill, G.A. jr., (1999), *Marketing Research: Methodological Foundations*, seventh edition, Fort Worth, The Dryden Press

Churchill, G.A. jr. and Surprenant, C., (1982), An Investigation into the Determinants of Customer Satisfaction, *Journal of Marketing Research,* Vol. 19, No. 4: 491-504

Chiu, C.-M., Lin, H.-Y. and Sun, S.-Y., (2009), Understanding customers' loyalty intentions towards online shopping: an integration of technology acceptance model and fairness theory, Behaviour & Information Technology, Vol. 28, Issue 4: 347 – 360

Cialdini, R.B., Petty, R.E. and Cacioppo, J.T., (1981), Attitude And Attitude Change, *Annual Review of Psychology*, 32: 357 - 404

Coase, R.H., (1937), The Nature of the Firm, Economica, n.s., 4, November, reprinted in: R.H. Coase, (1988), *The Firm the Market and the Law*, The University of Chicago Press, Chicago, pp. 33 – 55

Cobb, C.J. and Hoyer, W.D., Planned Versus Impulse Purchase Behavior, *Journal of Retailing*, Vol. 62, NO. 4: 384 – 409

Cody-Allen, E. and Kishore, R., (2006), An Extension of the UTAUT Model with E-Quality, Trust, and Satisfaction Constructs, in: *Proceedings on the 2006 ACM SIGMIS CPR Conference on Computer Personnel Research*, ACM

Coelho, F., and Easingwood, C., (2003), Multiple channel structures in financial services: A framework, *Journal of Financial Services Marketing*, Vol. 8, 1: 22 - 34

Coelho, F.J. and Easingwood, C., (2004), Multiple Channel Systems in Services: Pros, Cons and Issues, *The Service Industries Journal*, Vol. 24, No. 5: 1 – 29

Coelho, F. and Easingwood, C., (2008), A model of the antecedents of multiple channel usage, *Journal of Retailing and Consumer Services*, 15: 32 - 41

Cohen, J.B., Fishbein, M. and Ahtola, O.T., (1972), The Nature and Uses of Expectancy-Value Models in Consumer Attitude Research, *Journal of Marketing Research*, Vol. IX, November: 456 – 460

Cohen, J.E., (2006), Citizen satisfaction with contacting government on the internet, *Information Polity*, 11: 51 - 65

Collier, J.E. and Bienstock, C.C., (2006), Measuring Service Quality in E-Retailing*, Journal of Service Research*, Vol. 8, No. 3: 260 - 275

Coltman, T., Devinney, T.M., Latukefu, A. and Midgley, D.F., (2001), E-Business: revolution, evolution or hype, *California Management Review*, Vol. 44, No. 1: 57 -86

Coltman, T., Devinney, T.M., Latukefu, A. and Midgley, D.F., (2002), Keeping E-Business In Perspective, *Communications of the ACM*, Vol. 45, No. 8: 69 – 73

Comley, (2008), Online research communities, *International Journal of Market Research*, Vol. 50, Issue 5: 679 - 694

Compeau, D.R. and Higgins, C.A., (1995a), Computer Self-Efficacy: Development of a Measure and Initial Test, *MIS Quarterly*, June: 189 - 211

Compeau, D.R. and Higgins, C.A., (1995b), Application of Social Cognitive Theory to Training for Computer Skills, *Information Systems Research*, 6, 2: 118 - 143

Compeau, D., Higgins, C.A. and Huff, S., (1999), Social Cognitive Theory and Individual Reactions to Computing Technology: A Longitudinal Study, *MIS Quarterly*, Vol. 23, No. 2: 145 – 158

Constantinides, P., Chiasson, M.W. and Introna, L.D., (2012), The Ends of Information Systems Research: A Pragmatic Framework, *MIS Quarterly*, Vol. 36, No. 1: 1 - 19

Cook, K.S. and Whitmeyer, J.M., (1992), Two Approaches To Social Structure: Exchange Theory and Network Analysis, *Annual Review of Sociology*, 18: 109 – 127

Cooke, M., Watkins, N. and Moy, C., (2008), A hybrid online and offline approach to market measurement studies, *International Journal of Market Research*, Vol. 51, Issue 1: 29 - 48

Coolen, H. and Hoekstra, J., (2001), Values as determinants of preferences for housing attributes, *Journal of Housing and the Built Environment*, 16: 285 – 306

Coote, L.V., (2011), Measurement properties of rankings and ratings, *Journal of Business Research*, 64: 1296 - 1302

Corstjens, M.L. and Gautschi, D.A., (1983), Formal Choice Models In Marketing, *Marketing Science*, Vol. 2, No. 1: 19 – 56

Cortinas, M., Chocarro, R. and Villanueva, M.L., (2010), Understanding multi-channel banking customers, *Journal of Business Research*, 63: 1215 - 1221

Couper, M.P., (2000), Web Surveys, *Public Opinion Quarterly*, Vol. 64: 464 – 494

Crano, W.D. and Prislin, R., (2008), *Attitudes and Attitude Change*, Psychology Press, New York

Cronin, J.J. and Taylor, S.A., (1992), Measuring Service Quality: A Reexamination and Extension, *Journal of Marketing*, Vol. 56, July: 55 – 68

Cronin, J.J. and Taylor, S.A., (1994), SERVPERF Versus SERVQUAL: Reconciling Performance-Based and Perceptions-Minus Expectations Measurement of Service Quality, *Journal of Marketing*, Vol. 58, January: 125 – 131

Crosno, J.L., Nygaard, A. and Dahlstrom, R., (2007), Trust in the development of new channels in the music industry, *Journal of Retailing and Consumer Services*, 14: 216 – 223

Culwin, F. and Gaulkner, X., (2001), Browsing the Web: Delay, Determination and Satisfaction, in: *Proceedings of the 34th Hawaii International Conference on System Sciences*, IEEE

Cummings, J.N. and Kraut, R., (2002), Domesticating Computers and the Internet, *The Information Society*, 18: 221 - 231

Cuppen, B. and Cuppen, J., (2004), *ICT in Bedrijf, deel III: ICT (service) management en CPM met de BSC*, Academic Service, Den Haag

Curasi, C.F., (2001), A critical exploration of face-to-face interviewing vs. computer-mediated interviewing, *International Journal of Market Research*, Vol. 43, Quarter 4: 361 - 375

Curran, J.M., Meuter, M.L. and Surprenant, C.F., (2003), Intentions to Use Self-Service Technologies: A Confluence of Multiple Attitudes, *Journal of Service Research*, Vol. 5, No. 3, February: 209 – 224

Curry, D.J. and Menasco, M.B., (1983), On the Separability of Weights and Brand Values: Issues and Empirical Results, *Journal of Consumer Research*, Vol. 10, June: 83 - 95

Cyr, D., Hassasein, K., Head, M. and Ivanov, A., (2007), The role of social presence in establishing loyalty in e-Service environments, *Interacting with Computers*, 19: 43 - 56

D

Dabholkar, P.A., (1996), Consumer evaluations of new technology-based self-service options: An investigation of alternative models of service quality, *International Journal of Research in Marketing*, 13: 29 - 51

Dabholkar, P. A., (2006), Factors Influencing Consumer Choice Of A "Rating Website": An Experimental Investigation Of An Online Interactive Decision Aid, *Journal of Marketing Theory and Practice*, Vol. 14, No. 4: 259 – 273

Dabholkar, P.A. and Bagozzi, R.P., (2002), An Attitudinal Model of Technology-Based Self-Service: Moderating Effects of Consumer Traits and Situational Factors, *Journal of the Academy of Marketing Sciences*, Vol. 30, No. 3: 184 - 201

Dabholkar, P.A., Shepherd, C.D. and Thorpe, D.I., (2000), A Comprehensive Framework for Service Quality: An Investigation of Critical Conceptual and Measurement Issues Through a Longitudinal Study, *Journal of Retailing*, Vol. 76, No. 2: 139 – 173

Dadzie, K.Q, Chelariu, C. and Winston, E., (2005), Customer Service In The Internet-Enabled Logistics Supply Chain: Website Design Antecedents And Loyalty Effects, *Journal of Business Logistics*, Vol. 26, Issue 1: 53 - 78

Daft, R.L. and Lengel, R.H., (1986), Organizational Information Requirements, *Media Richness And Structural Design*, Vol. 32, No. 5: 554 - 571

Daft, R.L., Lengel, R.H. and Trevino, L.K., (1987), Message Equivocality, Media Selection, and Manager Performance: Implications for Information Systems, *MIS Quarterly*, September: 355 – 366

Danahar, P.J., (1997), Using Conjoint Analysis to Determine the Relative Importance of Service Attributes Measured in Customer Satisfaction Surveys, *Journal of Retailing*, Vol. 73, (2): 235 - 260

REFERENCES

Danaher, P.J., Wilson, I.W. and Davis, R.A., (2003), A Comparison of Online and Offline Consumer Brand Loyalty, *Marketing Science*, Vol. 22, No. 4: 461 – 476

Davern, M., Rockwood, T.H., Sherrod, R. and Campbell, S., (1995), Prepaid Monetary Incentives And Data Quality In Face-To-Face Interviews, *Public Opinion Quarterly*, Vol. 67: 139 - 147

Davis, F.D., (1989), Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology, *MIS Quarterly*, September: 318 – 340

Davis, F.D., (2006), On The Relationship Between HCI And Technology Acceptance Research, in: Zhang, P. and Galetta, D. (eds.): *Human-Computer Interaction and Management Information Systems: Foundations*, M.E. Sharpe, New York

Davis, F.D. and Venkatesh, V., (1995), Measuring User Acceptance of Emerging Information Technologies: An Assessment of Possible Method Biases, in: *Proceedings of the 28th Hawaii International Conference on System Sciences (HICSS '95)*, IEEE

Davis, F.D., and Warshaw, P.R., (1991), Choice Sets and Choice Intentions, *Journal of Social Psychology,* Vol. 131, Issue 6: 823 – 830

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R., (1989), User Acceptance of Computer Technology: A Comparison of Two Theoretical Models, *Management Science*, Vol. 35, No. 8: 982 – 1003

Dawes, J., (2008), Do data characteristics change according to the number of scale points used?, *International Journal of Market Research*, Vol. 50, Issue 1: 61 - 77

Day, G.S., (1972), Evaluating Models Attitude Structure, *Journal of Marketing Research*, Vol. IX, August: 279 - 286

Deeter-Schmelz, D.R., Kennedy, K.N. and Goebel, D.J., (2002), Understanding sales manager effectiveness. Linking attributes to sales force values*, Industry Marketing Management*, 3: 617 – 626

De Figueiredo, J.M., (2000), Finding Sustainable Profitability in Electronic Commerce*, Sloan Management Review*, Summer: 41 – 52

Degeratu, A.M., Rangaswamy, A. and Wu, J., (2000), Consumer choice behavior in online and traditional supermarkets: The effects of brand name, price, and other search attributes, *International Journal of Research in Marketing*, 17: 55 - 78

Dell'Olio, L., Ibeas, A. and Cecin, P., (2010), Modelling user perception of bus transit quality, *Transport Policy*, 17: 388 - 397

DeLone, W.H. and McLean, E.R., (1992), Information Systems Success: The Quest for the Dependent Variable, *Information Systems Research*, 3:1: 60 -95

DeLone, W.H. and McLean, E.R., (2003), The DeLone and McLean Model of Information Systems Success: A Ten-Year Update, *Journal of Information Management Systems*, Vol. 19, No. 4: 9 - 30

DeLone, W.H. and McLean, E.R., (2004), Measuring e-Commerce Success: Applying the DeLone & McLean Information Systems Success Model, *International Journal of Electronic Commerce*, Vol. 9, No. 1: 31 – 47

Demsetz, H., (1995), *The economics of the business firm*, Cambridge University Press, Cambridge

Dennis, A.R. and Kinney, S.T., (1998), Testing Media Richness Theory in the New Media: The Effects of Cues, Feedback, and Task Equivocality, *Information Systems Research*, Vol. 9, No. 3: 256 – 274

Dennis, A.R., Fuller, R.M. and Valacich, J.S., (2008), Media, Tasks, and Communication Processes: A Theory of Media Synchronicity, *MIS Quarterly*, Vol. 32, No. 3: 575 - 600

Dennis, A.R., Wixom, B.H. and Vandenberg, R.J., (2001), Understanding Fit and Appropriation Effects in Group Support Systems via Meta-Analysis, *MIS Quarterly*, Vol. 25, no. 2: 167 – 193

Denstadli, J.M. and Lines, R., (2007), Conjoint respondents as adaptive decision makers, *International Journal of Market Research*, Vol. 49, Issue 1: 117 – 132

Deutskens, E., De Ruyter, K. and Wetzels, M., (2006), An Assessment of Equivalence Between Online and Mail Surveys in Service Research, *Journal of Service Research*, Volume 8, No. 4: 346 – 355

Devaraj, S., Easly, R.F. and Crant, J.M., (2008), How Does Personality Matter? Relating the Five-Factor Model to Technology Acceptance and Use, *Information Systems Research*, Vol. 19, No. 1: 93 - 105

Devaraj, S., Fan, M. and Kohli, R., (2002), Antecedents of B2C Channel Satisfaction and Preference: Validating e-Commerce Metrics, *Information Systems Research*, Vol. 13, No. 3: 316 – 333

Devaraj, S., Fan, M. and Kohli, R., (2006), Examination of online channel preference: Using the structure-conduct-outcome framework, *Decision Support Systems*, 42: 1089 – 1103

Devlin, D., Birtwistle, G. and Macedo, N., (2003), Food Retailing positioning strategy: a means-end chain analysis, *British Food Journal*, Vol. 105, No. 9: 653 - 670

Devlin, J.F. and Yeung, M., (2003), Insights into customer motivations for switching to Internet banking, *The International Review of Retail, Distribution and Consumer Research*, 13:4, October: 375 – 392

De Vries, E.J., (2003), *ICT Enabled Distribution of Services: Service Positioning Strategy, Front Office Information and Multi-channeling*, Ph.D thesis, Universal Press, Veenendaal, University of Amsterdam

De Vries, E.J. and Brijder, H.G., (2000), Knowledge management in hybrid supply channels: a case study, *International Journal of Technology Management*, Vol. 20, No. 5/6/7/8: 569 – 587

De Vries, E.J. and Huizing, A., (2007), Information Management: Setting the Scene, in: Huizing, A. and De Vries, E.J., (eds.), *Information Management: Setting the Scene*, Elsevier, Oxford/ Amsterdam

De Vries, W., Kasper, J.D.P. and Helsdingen, P.J.C. van, (1999), *Dienstenmarketing*, Educatieve Partners Nederland, Houten

De Vries, W., Kasper, J.D.P. and Helsdingen, P.J.C. van, (2001), *Dienstenmarketing*, Wolters-Noordhoff, Groningen/Houten

De Wulf, K. and Odekerken-Schröder, G. , (2003), Assessing the impact of a retailer's relationship efforts on consumers' attitudes and behavior, *Journal of Retailing and Consumer Services*, 10: 95 - 108

De Wulf, K., Odekerken-Schröder, G. and Iacobucci, D., (2001), Investments in Consumer Relationships: A Cross-Country and Cross-Industry Exploration, *Journal of Marketing*, Vol. 65: 33 – 55

De Wulf, K., Odekerken-Schröder, G. and Van Kenhove, P., (2003), Investments in consumer relationships: a critical reassessment and model extension, *International Review of Retail, Distribution and Consumer Research*, 13, 3: 245 - 261

DeWitt, T. and Brady, M.K., (2003), Rethinking Service Recovery Strategies, *Journal of Service Research*, Vol. 6, No. 2: 193 – 207

Dhar, R., (1997), Consumer Preference for a No-Choice Option, *Journal of Consumer Research*, Vol. 24, September: 215 – 231

Dhar, R. and Nowlis, S.M., (2004), To Buy or Not to Buy: Response Mode Effects on Consumer Choice, *Journal of Marketing Research*, Vol. XLI, November: 423 - 432

Dhar, R. and Sherman, S.J., (1996), The Effect of Common and Unique Features in Consumer Choice, *Journal of Consumer Research*, Vol. 23, December: 193 – 203

Dhar, R. and Simonson, I., (1992), The Effect of the Focus of Comparison on Consumer Preferences, *Journal of Marketing Research*, Vol. XXIX, November: 430 - 440

Dhar, R. and Simonson, I., (2003), The Effect of Forced Choice on Choice, *Journal of Marketing Research*, Vol. XL, March: 146 – 160

Dhar, R., Nowlis, S.M. and Sherman, S.J., (2000), Trying Hard or Hardly Trying: An Analysis of Context Effects in Choice, *Journal of Consumer Psychology*, 9, (4): 189 – 200

Dholakia, R.R. and Chiang, K.-P., (2003), Shoppers in Cyberspace: Are they from Venus or Mars and does it Matter, *Journal of Consumer Psychology*, Vol. 13, Issue 1-2: 171 - 177.

Dholakia, U.M., Kahn, B.E., Reeves, R., Rindfleisch, A., Stewart, D. and Taylor, E., (2010), Consumer Behavior in a Multichannel, Multimedia Retailing Environment, *Journal of Interactive Marketing*, 24: 86 - 95

Dholakia, R.R., Zhao, M. and Dholakia, N., (2005), Multichannel retailing: a case study of early experiences, *Journal of Interactive Marketing,* Vol. 19, No. 2: 63 – 74

Dholakia, U.M. and Morwitz, V.G., (2002), The Scope and Persistence of Mere-Measurement Effects: Evidence from a Field Study of Customer Satisfaction Measurement, *Journal of Consumer Research*, Vol. 29, September: 159 - 167

Dittrich, R., Francis, B., Hatzinger, R. and Katzenbeisser, W., (2007), A paired comparison approach for the analysis of sets of Likert-scale responses, *Statistical Modelling*, 7, (1): 3 - 28

Doffer, A., Verhoef, P. and De Wilde, E., (2005), De multichannelende consument wordt dominant, *Tijdschrift voor Marketing*, Mei: 50 – 52

Donthu, N. and Garcia, A., (1999), The Internet Shopper, *Journal of Advertising Research*, May-June: 52 – 58

Drejer, A., (2002), *Strategic Management and Core Competences*, Quorum Books, Westport, Connecticut

Dreze, X. and Zufryden, F., (1997), Testing Web Site Design and Promotional Content, *Journal of Advertising Research*, March-April: 77 - 91

Drezner, Z., Turel, O. and Zerom, D., (2010), A Modified Kolmogorov-Smirnov Test for Normality, *Communications in Statistics – Simulation and Computation*, 39: 693 - 704

Dunkelberg, W.C. and Day, G.S., (1973), Nonresponse Bias and Callbacks in Sample Surveys, *Journal of Marketing Research*, Vol. X, May: 160 - 168

Durkin, M. and O'Donnell, A., (2005), Toward a Model of Adoption in Internet Banking: Strategic Communication Challenges, *The Service Industries Journal*, Vol. 25, No. 7: 861 – 878

Durkin, M., Jennings, D., Mulholland, G. and Worthington, S., (2008), Key influencers and inhibitors on adoption of the Internet for banking, *Journal of Retailing and Consumer Services*, 15: 348 - 357

E

Eagly, A.H. and Chaiken, S., (1993), *The Psychology Of Attitudes*, Wadsworth Cengage Learning, Belmont

Eagly, A.H. and Himmelfarb, S., (1978), Attitudes and Opinions, *Annual Review of Psychology*, 29: 517 - 554

Earl, M.J., (2000), Evolving the E-Business, *Business Strategy Review*, Vol. 11, issue 2: 33 – 38

Easingwood, C. and Coelho, F., (2003), Single versus Multiple Strategies: Typologies and Drivers, *The Service Industries Journal*, Vol. 23, No. 2: 31 – 46

Easingwood, C. and Storey, C., (1996), The Value of Multi-Channel Distribution Systems in the Financial Services Sector, *The Service Industries Journal*, Vol. 16, No. 2: 223 – 241

Eastin, M.S., (2002), Diffusion of e-commerce: an analysis of the adoption of four e-commerce activities, *Telematics and Informatics*, 19: 251 – 267

Ebbers, W.E., Pieterson, W.J. and Noordman, H.N., (2008), Electronic government: Rethinking channel management strategies, *Government Information Quarterly,* Vol. 25, Issue 2: 181 - 201

Edens, E. and Pijlgroms, R.B.J., (1990), *Statistiek*, Educaboek, Culemborg

Edmondson, A.C. and McManus, S.E., (2007), Methodological Fit In Management Field Research, *Academy of Management Review*, Vol. 32, No. 4: 1155 - 1179

Edvardsson, B. Gustafsson, A. and Roos, I., (2005), Service portraits in service research: a critical review, *International Journal of Service Industry Management*, Vol. 16, No. 1: 107 - 121

Edwards, W., (1954), The Theory of Decision Making, Psychological Bulletin, 51: 380 – 417, reprinted in: Weiss, J.W. and Weiss, D.J., (eds.), (2009), *A Science Of Decision Making*, Oxford University Press, Oxford

Edwards, W., (1961), Behavioral Decision Theory, *Annual Review of Psychology*, 12: 473 - 498

Edwards, W., (1962), Subjective probabilities inferred from decisions, Psychological Review, 69: 109 – 135, reprinted in: Weiss, J.W. and Weiss, D.J., (eds.), (2009), *A Science Of Decision Making*, Oxford University Press, Oxford

Edwards, W. and Fasolo, B., (2001), Decision Technology, *Annual Review of Psychology*, 52: 581 - 606

Einhorn, H.J. and Hogarth, R.M., (1981), Behavioral Decision Theory: Processes Of Judgment And Choice*, Annual Review of Psychology*, 32: 53 - 88

Elliott, M.T., (1994), An Investigation Of Consumer External Information Search For Professional Services, *The Journal of Marketing Management*, Fall/Winter: 8 – 22

Elliott, M.T. and Fu, F.Q., (2008), Consumer Acceptance Of Technology Products: The Impact Of Tactical Selling Approaches, *Marketing Management Journal*, Fall: 47 – 64

Engel, J.E., Blackwell, R.D. and Miniard, R.W., (1990), *Consumer Behavior*, sixth edition, The Dryden Press, Chicago

Enis, B.M., Cox, K.K. and Stafford, J.E., (1972), Students as Subjects in Consumer Behavior Experiments, *Journal of Marketing Research*, Vol. IX, February: 72 – 74

Erasmus, A.C., Boshoff, E. and Rousseau, G.G., (2001), Consumer decision-making models within the discipline of consumer science: a critical approach, *Journal of Family Ecology and Consumer Sciences*, Vol. 29: 82 - 90

Erdem. T. and Swait, J. (2004), Brand Credibility, Brand Consideration, and Choice, *Journal of Consumer Research*, Vol. 31, June: 191 - 198

Erdem, T., Swait, J. and Valenzuela, A., (2006), Brands as Signals: A Cross-Country Validation Study, *Journal of Marketing*, Vol. 70, January: 34 – 49

Ericsson, K.A. and Simon, H.A., (1993), *Protocol analysis: verbal reports as data*, The MIT Press, Cambridge

Eriksson, K. and Nilsson, D., (2007), Determinants of the continued use of self-service technology: The case of Internet banking, *Technovation*, 27: 159 - 167

Esper, T.L., Jensen, T.D., Turnipseed, F.L. and Burton, S., (2003), The Last Mile: An Examination of Effects of Online Retail Delivery Strategies on Consumers, *Journal of Business Logistics*, Vol. 24, No. 2: 177 – 203

Ethier, J., Hadaya, P., Talbot, J. and Cadieux, J., (2006), B2C web site quality and emotions during online shopping episodes: An empirical study, *Information & Management*, 43: 627 – 639

Etter, W.L. (1975), Attitude Theory and Decision Theory: Where is the Common Ground?, *Journal of Marketing Research*, Vol. XII, November: 481 - 483

Evans, P.B. and Wurster, T.S., (1997), Strategy and the new economics of information, *Harvard Business Review*, September - October: 71 – 82

Evans, P.B. and Wurster, T.S., (1999), Getting Real About Virtual Commerce, *Harvard Business Review*, November – December: 85 – 94

Evans, P.B. and Wurster, T.S., (2000), *De Nieuwe Economie*, Business Contact, Amsterdam

Everard, A. and Galletta, D.F., (2005), How Presentation Flaws Affect Perceived Site Quality, Trust, and Intention to Purchase from an Online Store, *Journal of Management Information Systems*, Vol. 22, No. 3: 55 – 95

F

Fahy, J. and Hooley, G., (2002), Sustainable competitive advantage in electronic business: towards a contingency perspective on the resource-based view*, Journal of Strategic Marketing*, 10: 241 – 253

Falk, T., Schepers, J., Hammerschmidt, M. and Bauer, H.H., (2007), Identifying Cross-Channel Dissynergies for Multichannel Service Providers, *Journal of Service Research*, Vol. 10, No. 2: 143 - 160

Fan, J.C., (2006), Trust and Electronic Commerce – A Test of an E-Bookstore, in: *IEEE International Conference on e-Business Engineering*, ICEBE'06, IEEE

Fang, X., Chan, S., Brzezinski, J. and Xu, S., (2005), Moderating Effects of Task Type on Wireless Technology Acceptance, *Journal of Management Information Systems*, Vol. 22, No.3: 123 – 157

Farag, S., (2006), *E-shopping and its interactions with in-store shopping*, Ph.D thesis, Faculty of Geosciences, Utrecht University

Fazio, R.H., (1995), Attitudes as object-evaluation associations: Determinants, consequences, and correlates of attitude accessibility, in: Petty, R.E. and Krosnick, J.A. (eds.): *Attitude strength: Antecedents and consequences*, Erlbaum, Mahwah

Fazio, R.H., (2001), On the automatic activation of associated evaluations: An overview, *Cognition And Emotion*, 15, (2): 115 - 141

Farkas, A.J. and Anderson, N.H., (1976), Integration Theory And Inoculation Theory As Explanations Of The "Paper Tiger" Effect, *The Journal of Social Psychology*, 98: 253 – 268

Farquhar, J.D. and Panther, T., (2007), The More, the Merrier? An Exploratory Study into Managing Channels in UK Financial Services, *International Review of Retail, Distribution and Consumer Research*, Vol. 17, No. 1: 43 - 62

Feather, N.T., (1992), Expectancy-value theory and unemployment effects, *Journal of Occupational and Organizational Psychology*, 65: 315 - 330

Featherman, M.S. and Pavlou, P.A., (2003), Predicting e-services adoption: a perceived risk facets perspective, *International Journal Human-Computer Studies*, 59: 451 – 474

Ferber, R., (1977), Research By Convenience, *Journal of Consumer Research*, Vol. 4, June: 57 - 58

Festinger, L,, (1957), *A Theory of Cognitive Dissonance*, Row, Peterson and Company, Evanston

Field, A., (2005), *Discovering Statistics Using SPSS*, second edition, Sage, London

Finn, D.W. and Lamb, C.W., (1991), An Evaluation of the SERVQUAL Scales in a Retailing Setting, *Advances in Consumer Research*, Vol. 18: 483 - 490

Finkenstein, S., (2001), The Myth Of Managerial Superiority In Internet Startups: An Autopsy, *Organizational Dynamics*, Vol. 30, No. 2: 172 – 185

Fiore, A.M., Kim, J. and Lee, H.-H., (2005), Effect of image interactivity technology on consumer responses toward the online retailer, *Journal of Interactive Marketing*, Vol. 19, Issue 3: 38 - 53

Fishbein, M., (1963), An Investigation of the Relationships between Beliefs about an Object and the Attitude toward that Object, *Human Relations*, Vol. 16, No. 3: 233 - 239

Fishbein, M., (1976), Extending The Extended Model: Some Comments, *Advances in Consumer Research*, Vol. III, Issue 1: 491 – 497

Fishbein, M. and Ajzen, I., (1972), Attitudes and Opinions, in: Mussen, P.H. and. Rosenzweig, M.R., *Annual Review of Psychology*, Paulo Alto, Annual Review: 487 – 544,

Fishbein, M. and Ajzen, I., (1975), *Belief, Attitude, Intention And Behavior*, Addison-Wesley Publishing Company, Reading, Massachusetts

Fishbein, M. and Ajzen, I., (2010), *Predicting and Changing Behavior*, Psychology Press, New York

Fishbein, M. and Middlestadt, S., (1995), Noncognitive Effects on Attitude Formation and Change: Fact or Artifact, *Journal of Consumer Psychology*, 4, (2): 181 – 202

Fishbein, M. and Middlestadt, S.E., (1997), A Striking Lack of Evidence for Nonbelief-Based Attitude Formation and Change: A Response to Five Commentaries, *Journal of Consumer Psychology*, 6, (1): 107 – 115

Fishburn, P.C., (1991), Decision Theory: The Next 100 Years?, *The Economic Journal*, 101, January: 27 – 32

Fiske, S.T., (2008), Perseverance Furthers: Aims of and Sympathy for Both Student and Nonstudent Sampling, *Psychological Inquiry*, 19: 106 – 107

Fitzsimons, G.J. and Shiv, B., (2001), Nonconscious and Contaminative Effects of Hypothetical Questions on Subsequent Decision Making, *Journal of Consumer Research*, Vol. 28, September: 224 - 238

Flaviån, C., Guinalíu, M. and Gurrea, R., (2006), The role played by perceived usability, satisfaction and consumer trust on website loyalty, *Information & Management*, 43: 1 – 14

Flick, U., (2009), *An Introduction To Qualitative Research*, fourth edition, Sage, London

Forrest, M. and Andersen, B., (1986), Ordinal Scale and statistics in medical research, *British Medical Journal*, Vol. 292: 537 - 538

Foxall, G.R., (2005, *Understanding Consumer Choice*, Palgrave MacMillan, Basingstoke, Hampshire

Foxall, G.R., (2007), *Explaining Consumer Choice*, Palgrave MacMillian, Basingstoke, Hampshire

Foxall, G.R., Goldsmith, R.E. and Brown, S., (1998), *Consumer Psychology for Marketing*, second edition, South-Western Cengage Learning, London

Frankel, M.R. and Frankel, L.R., (1977), Some Recent Developments in Sample Survey Design, *Journal of Marketing Research*, Vol. XIV, August: 280 - 293

Frissen, V.A.J., (2000), ICTs in the Rush Hour of Life, *The Information Society*, 16: 65 - 75

Fuller, R.M. and Dennis, A.R., (2004), Does Fit Matter? The Impact of Fit on Collaboration Technology Effectiveness over Time, in: *Proceedings of the 37th Hawaii International Conference on System Sciences*, IEEE

G

Gaito, J., (1980), Measurement Scales and Statistics: Resurgence of an Old Misconception, *Psychological Bulletin*, Vol. 87, No. 3: 564 – 567

Galbraith, J., (1977), *Organizational Design*, Addison-Wesley, Reading

Ganesh, J., Padmabhuni, S. and Moitra, D., (2004), Web Services and Multi-Channel Integration: A Proposed Framework, in: *Proceedings of the IEEE International Conference on Web Services (ICWS'04)*, IEEE

Gao, Y. and Koufaris, (2006), Perceptual Antecedents of User Attitude in Electronic Commerce, *The Data Base for Advances in Information Systems*, Vol. 37, No. 2 & 3: 42 - 50

Gardial, S.F., Clemons, D.S., Woodruff, R.B., Schumann, D.W., and Burns, M.J., (1994), Comparing Consumers' Recall of Prepurchase and Postpurchase Product Evaluation Experiences, *Journal of Consumer Research*, Vol. 20, March: 548 - 560

Gardner, C. and Amoroso, D.L., (2004), Development of an Instrument to Measure the Acceptance of Internet Technology by Consumers, in: *Proceedings of the 37th Hawaii International Conference on System Sciences*, IEEE

Gatignon, H. and Robertson, T.S., (1985), A Propositional Inventory for New Diffusion Research, *Journal of Consumer Research*, Vol. 11, March: 849 – 867

Gefen, D., (2000), E-commerce: the role of familiarity and trust, *Omega*, Vol. 28, Issue 6: 725 - 738

Gefen, D., (2002), Customer Loyalty in E-Commerce, *Journal of the Association for Information Systems*, Vol. 3: 27 - 51

Gefen, D., Karahanna, E. and Straub, D.W., (2003a), Trust and TAM in Online Shopping: An Integrated Model, *MIS Quarterly*, Vol. 27, No. 1: 51 – 90

Gefen, D., Rao, V.S. and Tractinsky, N., (2003b), The Conceptualization of Trust, Risk and Their Relationship in Electronic Commerce: The Need for Clarifications, in: *Proceedings of the 36th Hawaii International Conference on System Sciences*, HICSS'03, IEEE

Gefen, D. and Straub, D., (2000), The Relative Importance of Perceived Ease of Use in IS Adoption: A Study of E-Commerce Adoption, *Journal of the Association for Information Systems*, Vol. 1, Article 8, October: 1 – 28

Gefen, D. and Straub, D., (2003), Managing User Trust in B2C e-Services, *e-Service Journal*, Vol. 2, No. 2: 7 – 24

Geissler, G.L., Zinkhan, G.M. and Watson, R.T., (2006), The Influence of Home Page Complexity on Consumer Attention, Attitudes, and Purchase Intent, *Journal of Advertising*, Vol. 35, Number 2: 69 - 80

Gelman, A. and Hill, J., (2007), *Data Analysis Using Regression and Multilevel/Hierarchical Models*, Cambridge University Press, New York

Gengler, C.E. and Reynolds, T.J., (1995), Consumer Understanding And Advertising Strategy: Analysis And Strategic Translation Of Laddering Data, *Journal of Advertising Research*, July/August: 19 – 33

Gensch, D.H. and Recker, W.W., (1979), The Multinomial, Multiattribute Logit Choice Model, *Journal of Marketing Research*, Vol. XVI, February: 124 - 132

Gensler, S., Dekimpe, M.G. and Skiera, B., (2007), Evaluating channel performance in multi-channel environments, *Journal of Retailing and Consumer Services*, 14: 17 - 23

Gerpott, T.J., (2011), Attribute perceptions as factors explaining Mobile Internet acceptance of cellular customers in Germany - An empirical study comparing actual and potential adopters with distinct categories of access appliances, *Expert Systems with Applications*, 38: 2148 - 2162

Gertner, R.H. and Stillman, R.S., (2001), Vertical Integration And Internet Strategies In The Apparel Industry, *The Journal of Industrial Economics*, Vol. XLIX, No. 4: 417 – 440

Geyskens, I. and Steenkamp, J.E.M., (2000), Economic and Social Satisfaction: Measurement and Relevance to Marketing Channel Relationships, *Journal of Retailing*, Vol. 76, (1): 11 - 32

Geyskens, I., Gielens, K. and Dekimpe, M.G., (2002), The Market Valuation of Internet Channel Additions, *Journal of Marketing*, Vol. 66: 102 – 119

Geyskens, I., Steenkamp, J.E.M. and Kumar, N., (2006), Make, Buy, Or Ally: A Transaction Cost Theory Meta-Analysis, *Academy of Management Journal*, Vol. 49, No. 3: 519 – 543

Ghose, A., (2009), Internet Exchanges for Used Goods: An Empirical Analysis of Trade Patters and Adverse Selection, *MIS Quarterly*, Vol. 33, No. 2: 263 – 291

Gibbons, J.D., (1992), The Use of Nonparametric Methods in Tax Research, *The Journal of the American Taxation Association*, Vol. 15, Issue 1: 110 - 120

Gibbons, J.D., (1993), *Nonparametric Statistics*, Sage Publications, Newbury Park

Gibson, L.D., (2001), What's Wrong With Conjoint Analysis?, *Marketing Research*, Winter: 16 - 19

Gibson, M.L., Lin, Z. and Burns, J.R., (2003), E-business experiences of practitioners and consultants, *Information Systems Management*, Summer: 8 – 21

Gibson, S.G., Harris, M.L. and Colaric, S.M., (2008), Technology Acceptance in an Academic Context: Faculty Acceptance of Online Education, *Journal of Education for Business*, July/August: 355 – 359

Gilbride, T.J. and Allenby, G.M., (2006), Estimating Heterogeneous EBA and Economic Screening Rule Choice Models, *Marketing Science*, Vol. 25, No. 5, September-October: 494 – 509

Gilbert, N. (ed.), (2001), *Researching Social Life*, second edition, Sage Publications, London

Gilly, M.C. and Zeithaml, V.A., (1985), The Elderly Consumer and Adoption of Technologies, *Journal of Consumer Research*, Vol. 12, December: 353 – 357

Girard, T., Korgaonkar, P. and Silverblaat, R., (2003), Relationship Of Type Of Product, Shopping Orientations, And Demographics With Preference For Shopping On The Internet, *Journal of Business and Psychology, Vol. 18*, No. 1: 101 – 120

Girenzer, G., (2004), Fast and Frugal Heuristics: The Tools of Bounded Rationality, in: Koehler, D.J. and Harvey, N. (eds.), *Blackwell Handbook of Judgment and Decision Making*, Blackwell Publishing, Malden, Massachusetts

Glasser, G.J. and Metzger, G.D., (1972), Random-Digit Sampling as a Method of Telephone Sampling, *Journal of Marketing Research*, Vol. IX, February: 59 - 64

Glezer, C. and Yadav, S.B., (2001), A Conceptual Model of an Intelligent Catalog Search System, *Journal of Organizational Computing and Electronic Commerce*, 11, (1): 31 – 46

Glick, P., (2008), Restating the Case: The Benefits of Diverse Samples for Theory Development, *Psychological Inquiry,* 19: 78 – 83

Goffman, E., (1959), *The Presentation of Self in Everyday Life*, Pelican Books, New York

Goldman, E., Valiyeva, E. and Tsurumi, H., (2008), Kolgomorov-Smirnov, Fluctuation, and Zg Tests for Convergence of Markov Chain Monte Carlo Draws, *Communications in Statistics – Simulation and Computation*, 37: 368 - 379

Goldsmith, R.E., (2002), Explaining And Predicting Consumer Intention To Purchase Over The Internet: An Exploratory Study, *Journal of Marketing Theory And Practice*, Spring: 22 – 28

Goldstein, W.M. and Hogarth, R.M., (1997), Judgment and decision research: Some historical context, in: Goldstein, W.M. and Hogart, R.M. (eds.): *Research on judgment and decision making*, Cambridge University Press, Cambridge

Goles, T. and Hirschheim, R., (2000), The paradigm is dead, the paradigm is dead ... long live the paradigm: the legacy of Burrell and Morgan, *Omega*, 28: 249 - 268

Goodhue, D.L., (1995), Understanding User Evaluations of Information Systems, *Management Science*, Vol. 41, No. 12: 1827 – 1844

Goodhue, D.L., (2007), Comment on Benbasat and Barki's "Quo Vadis TAM" article, *Journal of the Association for Information Systems*, Vol. 8, Issue 4: 219 - 222

Goodhue, D.L. and Thompson, R.L., (1995), Task-Technology Fit and Individual Performance, *MIS Quarterly*, June: 213 – 236

Gordon, M.E., Slade, L.A. and Schmitt, N., (1986), The "Science of the Sophomore" Revisited: from Conjecture to Empiricism, *Academy of Management Review*, Vol. 11, No. 1: 191 - 207

Gounaris, S.P. and Koritos, C.D., (2008), Using the extended innovation attributes framework and consumer personal characteristics as predictors of internet banking adoption, *Journal of Financial Services Marketing*, Vol. 13, 1: 39 - 51

Gounaris, S., Dimitriadis, S. and Stathakopoulos, V., Antecedents of Perceived Quality in the Context of Internet Retail Stores, *Journal of Marketing Management*, 21: 669 – 700

Goyder, J., (1985), Face-to-Face Interviews and Mailed Questionnaires: The Net Difference in Response Rate, *Public Opinion Quarterly*, Vol. 49: 234 - 252

Grandcolas, U., Rettie, R. and Marusenko, K., (2003), Web Survey Bias: Sample or Mode Effect?, *Journal of Marketing Management*, 19: 541 - 561

Granovetter, M., (1985), Economic Action and Social Structure: The Problem of Embeddedness, *The American Journal of Sociology*, Vol. 91, No. 3: 481 – 510

Granovetter, M., (1992), Economic Institutions as Social Constructions: A Framework for Analysis, *Acta Sociologica*, 35: 3 – 11

Granovetter, M., (2005), The Impact of Social Structure on Economic Outcomes, *Journal of Economic Perspectives*, Vol. 19, No. 1: 33 – 50

Green, P.E. and Srinivasan, V., (1978), Conjoint Analysis in Consumer Research: Issues and Outlook, *Journal of Consumer Research*, Vol. 5: 103 - 123

Green, P.E. and Srinivasan, V., (1990), Conjoint Analysis in Marketing: New Developments With Implications for Research and Practice, *Journal of Marketing*, October: 3 – 19

Green, P.E. and Wind, Y., (1975), New way to measure consumers' judgment, *Harvard Business Review*, July – Augustus: 107 - 117

Green, P.E., Krieger, A.M. and Wind, Y., (2001), Thirty Years of Conjoint Analysis: Reflections and Prospects, *Interfaces*, 31, 3: 56 – 73

Green, P.E., Wind, Y. and Jain, A.K., (1972), Preference Measurement of Item Collections, *Journal of Marketing Research*, Vol. IX, November: 371 – 377

Greenberg, J., (1987), The College Sophomore as Guinea Pig: Setting the Record Straight, *Academy of Management Review*, Vol. 12, No. 1: 157 – 159

Gregor, S., (2002), A Theory of Theories in Information Systems, in: Gregor, S. and Hart, D. (eds.), *Information Systems Foundations: Building the Theoretical Base*, Australian National University, Canberra: 1 - 20

Gregor, S., (2006), The Nature of Theory in Information Systems, *MIS Quarterly*, Vol. 30, No. 3: 611 - 642

Grether, D. and Wilde, L., (1984), An Analysis of Conjunctive Choice: Theory and Experiments, *Journal of Consumer Research*, Vol. 10, March: 373 - 385

Grewal, D., Levy, M. and Marshall, G.W., (2002), Personal Selling in Retail Settings: How Does the Internet and Related Technologies Enable and Limit Successful Selling?, *Journal of Marketing Management*, 18: 301 – 316

Gronhaug, K., (1973), Some Factors Influencing the Size of the Buyer's Evoked Set, *European Journal of Marketing*, Vol. 7, Issue 3: 232 - 241

Grönroos, C., (2006), What Can a Service Logic Offer Marketing Theory?, in: Lusch, R. and Vargo, S.L. (eds.), *The Service-Dominant Logic Of Marketing*, M.E. Sharpe Inc., New York

Grove, S.J. and Fisk, R.P., (1997), The Impact of Other Customers on Service Experiences: A Critical Incident Examination of "Getting Along", *Journal of Retailing*, Vol. 73, (1): 63 – 85

Grove, S.J., Fisk, R.P. and John, J., (2003), The future of service marketing: forecasts from ten services experts, *Journal of Services Marketing*, Vol. 17, No. 2: 107 – 121

Grover, V., Lim, J. and Ayyagari, R., (2006), The Dark Side of Information and Market Efficiency in e-Markets, *Decision Science*, Vol. 37, Number 3: 297 - 324

Groves, R.M., (1990), Theories And Methods Of Telephone Surveys, *Annual Review of Sociology*, 16: 221 – 240

Groves, R.M., (2006), Nonresponse Rates And Nonresponse Bias In Household Surveys, *Public Opinion Quarterly*, Vol. 70, No. 5: 646 - 675

Groves, R.M. and Magilavy, L.J., (1986), Measuring and Explaining Interviewer Effects in Centralized Telephone Surveys*, Public Opinion Quarterly*, Vol. 50: 251 – 266

Groves, R.M. and Peytcheva, E., (2008), The Impact Of Nonresponse Rates On Nonresponse Bias, *Public Opinion Quarterly*, Vol. 72, No. 2: 167 - 189

Groves, R.M., Cialdini, R.B. and Couper, M.P., (1992), Understanding The Decision To Participate In A Survey, *Public Opinion Quarterly*, Vol. 56: 475 - 495

Gruca, T.S., (1989), Determinants of Choice Set Size: An Alternative Method for Measuring Evoked Sets, *Advances in Consumer Research*, Vol. 16, Issue 1: 515 – 521

Grunert, K.G. and Bech-Larsen, T., (2005), Explaining choice option attractiveness by beliefs elicited by the laddering method, *Journal of Economic Psychology*, 26: 223 – 241

Grunert, K.G. and Grunert, S.C., (1995), Measuring subjective meaning structures by the laddering method: Theoretical considerations and methodological problems*, International Journal of Research in Marketing*, 12: 209 – 225

Gu, J.-C., Fan, L, Suh, Y.H. and Lee, S.-C., (2010), Comparing Utilitarian and Hedonic Usefulness to User Intention in Multipurpose Information Systems, *Cyberpsychology, Behavior, and Social Networking*, Vol. 13, Number 3: 287 - 297

Gu, J.-C., Lee, S.-C. and Suh, Y.-H., (2009), Determinants of behavioral intention to mobile banking, *Expert Systems with Applications*, Vol. 9, Issue 9: 11605 - 11616

Gulati, R. and Garino, J., (2000), Get the Right Mix of Bricks and Clicks, *Harvard Business Review*, May – June: 107 – 114

Gummesson, E., (2006), Many-to-Many Marketing as Grand Theory: A Nordic School Contribution, in: Lusch, R.L. and Vargo, S.L. (eds.), *The Service-Dominant Logic Of Marketing,* M.E. Sharpe Inc., New York

Gupta, A., Su, B. and Walter, Z., (2004), An Empirical Study of Consumer Switching from Traditional to Electronic Channels: A Purchase-Decision Process Perspective, *International Journal of Electronic Commerce*, Vol. 8, No. 3: 131 – 161

Gupta, S. and Kim, H-W., (2007), The Moderating Effect of Transaction Experience on the Decision Calculus in On-Line Repurchase, *International Journal of Electronic Commerce*, Vol. 12, No. 1: 127 - 158

Gutman, J., (1982), A Means-End Chain Model Based on Consumer Categorization Processes, *Journal of Marketing*, Vol. 46, Spring: 60 – 72

Gutman, J., (1984), Analyzing Consumer Orientations Toward Beverages Through Means-End Chain Analysis, *Psychology & Marketing*, Vol. 1, No. 34: 23 - 43

Gutman, J., (1997), Means-End Chains as Goal Hierarchies, *Psychology & Marketing*, Vol. 14, (6): 545 - 560

H

Ha, Y.-W., Park, S. and Ahn, H.-K., (2009), The Influence of Categorical Attributes on Choice Context Effects, *Journal of Consumer Research*, Vol. 36, October: 463 – 477

Haddon, L, (2006), The Contribution of Domestication Research to In-Home Computing and Media Consumption, *The Information Society*, 22: 195 - 203

Haenlein, M. and Kaplan, A.M., (2011), The Influence Of Observed Heterogeneity On Path Coefficient Significance: Technology Acceptance Within The Marketing Discipline, *Journal of Marketing Theory and Practice*, Vol. 19. No. 2: 153 – 168

Hamel, G. and Prahalad, C.K., (1994), *Competing for the Future*, Harvard Business School Press, Boston, Massachusetts

Hampton-Sosa, W. and Koufaris, M., (2005), The Effect of Web Site Perceptions on Initial Trust in the Owner Company, *International Journal of Electronic Commerce*, Vol. 10, No. 1: 55 – 81

Hansen, F., (1969), Consumer Choice Behavior: An Experimental Approach, *Journal of Marketing Research*, Vol. 6, No. 4: 436 – 443

Hansen, T., (2006), Determinants of Consumers' Repeat Online Buying of Groceries*, International Review of Retail, Distribution and Consumer Research,* Vol. 16, No. 1: 93 - 114

Hansen, T., (2008), Consumer values, the theory of planned behaviour and online grocery shopping, *International Journal of Consumer Studies*, 32: 128 – 137

Hansen, T., Jensen, J.M. and Solgaard, H.S., (2004), Predicting online grocery buying intention: a comparison of the theory of reasoned action and the theory of planned behavior, *International Journal of Information Management*, 24: 539 - 550

Harte, J.M. and Koele, P., (2001), Modelling and describing human judgment processes: The multiattribute evaluation case, *Thinking and Reasoning*, 7, (1): 29 - 49

Hartman, D.E. and Lindgren, J.H. jr., (1993), Consumer Evaluations of Goods and Services, *Journal of Marketing Services*, Vol. 7, No. 2: 4 - 15

Hartwick, J. and Barki, H., (1994), Explaining the Role of User Participation in Information System Use, *Management Science*, Vol. 40, No. 4: 440 – 465

Hashim, J., (2008), Factors influencing the acceptance of web-based training in Malaysia: applying the technology acceptance model, *International Journal of Training and Development*, 12, 4: 253 - 264

Häubl, G. and Murray, K.B., (2003), Preference Construction and Persistence in Digital Marketplaces: The Role of Electronic Recommendation Agents, *Journal of Consumer Psychology*, 13, 1 & 2: 75 - 91

Häubl, G. and Trifts, V., (2000), Consumer Decision Making in Online Shopping Environments: The Effects of Interactive Decision Aids, *Marketing Science*, Vol. 19, No. 1: 4 – 21

Haugtvedt, C.P., Schumann, D.W., Schneier, W.L and Warren, W.L., (1994), Advertising Repetition and Variation Strategies: Implications for Understanding Attitude Strength, *Journal of Consumer Research*, Vol. 21, June: 176 - 189

Hauser, J.R., (1986), Agendas and Consumer Choice, *Journal of Marketing Research*, Vol. XXIII, August: 199 – 212

Hauser, J.R. and Toubia, O., (2005), The Impact of Utility Balance and Endogeneity in Conjoint Analysis, *Marketing Science*, Vol. 24, No. 3: 498 - 507

Hauser, J.R. and Wernerfelt, B., (1990), An Evaluation Cost Model of Consideration Sets, *Journal of Consumer Research*, Vol. 16, March: 393 – 408

Hauser, J.R., Tellis, G.J. and Griffin, A., (2006), Research on Innovation: A Review and Agenda for Marketing Science, *Marketing Science*, Vol. 25, No. 6: 687 – 717

Hauser, P.M. and Hansen, M.H., (1944), On Sampling In Market Surveys, *Journal of Marketing*, Vol. 9, Issue 1: 26 – 31

Havery, N., (2007), Use of heuristics: Insights from forecasting research, *Thinking & Reasoning*, 13, (1): 5 - 24

Heilman, C.M., Bowman, D. and Wright, G.P., (2000), the Evolution of Brand Preferences and Choice Behaviors of Consumers New to a Market, *Journal of Marketing Research*, Vol. XXXVII, May: 139 – 155

Heinhuis, D. and De Vries, E.J., (2009), Modelling Customer Behaviour in Multi-channel Service Distribution, in: Kundisch, D., Veit, D.J., Weitzel, T. and Weinhardt, C., (eds.): *Enterprise Applications and Services in the Finance Industry*, Springer, Berlin

Heinhuis, D. and De Vries, E.J., (2010), Towards attribute development in multichannel consumer behavior, *paper FinanceCom*, 2010, Frankfurt

Hennig-Thurau, T., Henning, V., Sattler, H. Eggers, F. and Houston, M.B., (2007), The Last Picture Show? Timing and Order of Movie Distribution Channels, *Journal of Marketing*, Vol. 71, October: 63 – 83

Hennigton, A.H. and Janz, B.D., (2007), Information Systems And Healthcare XVI: Physician Adoption Of Electronic Medical Records: Applying The UTAUT Model In A Healthcare Context, *Communications of the Association for Information Systems*, Vol. 19: 60 - 80

Henry, P.J., (2008a), College Sophomores in the Laboratory Redux: Influences of a Narrow Data Base on Social Psychology's View of the Nature of Prejudice, *Psychological Inquiry*, 19: 49 – 71

Henry, P.J., (2008b), Student Sampling as a Theoretical Problem, *Psychological Inquiry*, 19: 114 – 126

Hernandez, B., Jimenez, J. and Martin, M.J., (2010), Customer behavior in electronic commerce: The moderating effect of e-purchasing experience, *Journal of Business Research*, 63: 964 - 971

Herr, P.M., (1995), Whither Fact, Artifact, and Attitude: Reflections on the Theory of Reasoned Action, *Journal of Consumer Psychology*, 4, (4): 371 – 380

Herrero, A. and Rodriquez del Bosque, I., (2008a), The effect of innovativeness on the adoption of B2C e-commerce: A model based on the Theory of Planned Behaviour, *Computers in Human Behavior*, 24: 2830 – 2847

Herrero, A. and Rodriquez del Bosque, I., (2008b), Explaining B2C e-commerce acceptance: An integrative model based on the framework by Gatignon and Robertson, *Interacting with Computers*, Vol. 20, Issue 2: 212 - 224

Heukelom, F., (2009), *Kahneman and Tversky and the Making of Behavioral Economics*, Ph.D thesis, Tinbergen Institute Research, Amsterdam

Hitt, L.M. and Frei, F.X., (2002), Do Better Customers Utilize Electronic Distribution Channels? The Case of PC Banking, *Management Science*, Vol. 48, No. 6: 732 - 748

Ho. S.Y. and Tam, K.Y., (2005), An Empirical Examination of the Effects of Web Personalization at Different Stages of Decision Making, *International Journal of Human-Computer Interaction*, 19, (1): 95 - 112

Ho, T.H., Lim, N. and Camerer, C.F., (2006a), How "Psychological" Should Economic and Marketing Models Be?, *Journal of Marketing Research*, Vol. XLIII: 341 – 344

Ho, T.H., Lim, N. and Camerer, C.F., (2006b), Modeling the Psychology of Consumer and Firm Behavior with Behavioral Economics, *Journal of Marketing Research*, Vol. XLIII: 307 – 331

Hoque, A.Y. and Lohse, G.L., (1999), An Information Search Cost Perspective for Designing Interfaces for Electronic Commerce, *Journal of Marketing Research*, Vol. 36, No. 3: 387 - 394

Hoeffler, S. and Ariely, D., (1999), Constructing Stable Preferences: A Look Into Dimensions of Experience and Their Impact on Preference Stability, *Journal of Consumer Psychology*, 8, (2): 113 - 139

Hofacker, C.F., (1984), Categorical Judgment scaling with Ordinal Assumptions, *Multivariate Behavioral Research*, 19: 91 - 106

Hoffman, D.L. and Novak, T.P., (1996), Marketing in Hypermedia Computer-Mediated Environments: Conceptual Foundations, *Journal of Marketing*, Vol. 60, July: 50 - 68

Hoffman, D.L. and Novak, T.P., (1997), A New Marketing Paradigm for Electronic Commerce, *The Information Society*, 13: 43 – 54

Hofstede, G., (2003), *Cultures and Organizations*, Profile Books LTD, London

Hogarth, R.M. and Karelaia, N., (2005), Simple Models for Multiattribute Choice with Many Alternatives: When It Does and Does Not Pay to Face Trade-offs with Binary Attributes, *Management Science*, Vol. 51, No. 12: 1860 – 1872

Holbrook, A.L., Green, M.C. and Krosnick, J.A., (2003), Telephone Versus Face-To-Face Interviewing Of National Probability Samples With Long Questionnaires, *Public Opinion Quarterly*, Vol. 67: 79 – 125

Holbrook, A.L., Krosnick, J.A., Moore, D. and Tourangeau, R., (2007), Response Order Effects In Dichotomous Categorical Questions Presented Orally, *Public Opinion Quarterly*, Vol. 71, No. 3: 325 – 348

Hollander, M. and Wolfe, D.A., (1973), *Nonparametric Statistical Methods*, John Wiley & Sons, New York

Holloway, B.B. and Beatty, S.E., (2003), Service Failure in Online Retailing: A Recovery Opportunity, *Journal of Service Research*, Vol. 6, No. 1: 92 – 105

Holmsen, C.A., Palter, R.N., Simon, P.R. and Weberg, P.K., (1998), Retail Banking: Managing Competition Among Your Own Channels, *The McKinsey Quarterly*, Number 1: 82 – 92

Holzwarth, M., Janiszewski, C. and Neumann, M.M., (2006), The Influence of Avatars on Online Consumer Shopping Behavior, *Journal of Marketing*, Vol. 70, No. 4, October: 19 - 36

Homans,, G.C., Social Behavior as Exchange, *American Journal of Sociology,* Vol. 63, No. 6: 597-606

Homburg, C., Koschate, N. and Hoyer, W.D., (2005), Do Satisfied Customers Really Pay More? A Study of the Relationship Between Customer Satisfaction and Willingness to Pay, *Journal of Marketing*, Vol. 69, April: 84 – 96

Hong, S. and Tam, K.Y., (2006), Understanding the Adoption of Multipurpose Information Appliances: The Case of Mobile Data Services, *Information Systems Research*, Vol. 17, No. 2: 162 - 179

Hong, S., Thong, J.Y.L., and Tam, K.Y., (2006), Understanding continued information technology usage behavior: A comparison of three models in the context of mobile internet, *Decision Support Systems*, 42: 1819 – 1834

Hong, W., Thong, J.Y.L. and Tam, K.Y., (2004), The Effects of Information Format and Shopping Task on Consumers' Online Shopping Behavior: A Cognitive Fit Perspective, *Journal of Management Information Systems*, Vol. 21, No. 3: 149 – 184

Hooley, G., Broderick, A. and Móller, K., (1998), Competitive positioning and the resource-based view of the firm, *Journal of Strategic Marketing*, 6: 97 – 115

Hornik, J. and Ellis, S., (1988), Strategies To Secure Compliance For A Mall Intercept Interview, *Public Opinion Quarterly*, Vol. 52: 539 – 551

Horsky, D. and Nelson, P., (2006), Testing the Statistical Significance of Linear Programming Estimators, *Management Science*, Vol. 52, No. 1: 128 - 135

Horsky, D. and Rao, M.R., (1984), Estimation Of Attribute Weights From Preference Comparisons, *Management Science*, Vol. 30, No. 7: 801 – 822

Horowitz, J.L. and Louviere, J.L., (1995), What is the role of consideration sets in choice modeling?, *International Journal of Research in Marketing*, 12: 39 – 54

Howard, J.A., (1977), *Consumer Behavior: Application of Theory*, McGraw-Hill Inc., New York

Howard, J.A. and Sheth, J.N., (1969), *The Theory of Buyer Behavior*, John Wiley & Sons, New York

Howcroft, B., Hewer, P. and Hamilton, R., (2003), Consumer Decision-Making Styles and the Purchase of Financial Services, *The Service Industries Journal*, Vol. 23, No. 3 (May): 63 -81

Hoyle, R.H., Harris, M.J. and Judd, C.M., (2002), *Research Methods in Social Relations*, seventh edition, Wadsworth Thomas Learning, United States

Hsiao, C.H. and Yang, C., (2011), The intellectual development of the technology acceptance model: A co-citation analysis, *International Journal of Information Management*, Vol. 31, Issue 2: 128 - 136

Hsu, M.-H. and Chiu, C.-M., (2004), Predicting electronic service continuance with a decomposed theory of planned behaviour, *Behaviour & Information Technology*, Vol. 23, No. 5: 359 – 373

Huang, E., (2005), The Acceptance Of Women-Centric Websites, *Journal of Computer Information Systems*, Summer: 75 - 83

Huang, P., Lurie, N.H. and Mitra, S., (2009), Searching for Experience on the Web: An Empirical Examination of Consumer Behavior for Search and Experience Goods, *Journal of Marketing*, Vol. 73, March: 55 - 69

Huber, F., Beckmann, S.C. and Hermann, A., (2004), Means-End Analysis: Does the Effective State Influence Information Processing Style?, *Psychology & Marketing*, Vol. 21, (9): 715 – 737

Huber, J. and Leone, R.P., (1979), A Note On The Fishbein Attitude Model As An Expected Utility Model, *Advances in Consumer Research*, Vol. 6, Issue 1: 245 - 247

Huber, J. and Puto, C., (1983), Market Boundaries and Product Choice: Illustrating Attraction and Substitution Effects, *Journal of Consumer Research*, Vol. 10, June: 31 - 44

Huber, J., Payne, J.W. and Puto, C., (1982), Adding Asymmetrically Dominated Alternatives: Violations of Regularity and the Similarity Hypothesis, *Journal of Consumer Research,* Vol. 9, June: 90 - 98

Hubona, G.S. and Geitz, S., (1997), External Variables, Beliefs, Attitudes and Information Technology

Usage Behavior, in: *Proceedings of The Thirtieth Annual Hawaii International Conference on System Sciences*, IEEE

Hudson, J.M. and Bruckman, A., (2004), "Go away": Participant Objections to Being Studied and the Ethics of Chatroom Research, *The Information Society*, 20: 127 - 139

Hughes, C.T. and Gibson, M.L., (1991), Students as Surrogates for Managers in a Decision-making Environment: An Experimental Study, *Journal of Management Information Systems*, Vol. 8, No. 2: 153 - 166

Hughes, T., (2003), Marketing Challenges in E-Banking: Standalone or Integrated?, *Journal of Marketing Management*, 19: 1067 – 1085

Hui, K.-L., Tan, B.C.Y. and Goh, C.-Y., (2006), Online information disclosure: Motivators and measurements, *ACM Transactions on Internet Technology*, Vol. 6, Issue 4

Huizing, A. and De Vries, E.J., 2007, Information Management: Setting the Scene, in: Huizing, A. and De Vries, E.J., (eds.), *Information Management: Setting the Scene*, Elsevier, Oxford/Amsterdam

Huizingh, E.K.R.E., (2002), Towards Successful E-Business Strategies: A Hierarchy of Three Management Models, *Journal of Marketing Management*, 18: 721 - 747

I

Iivari, J., (2005), An Empirical Test of the DeLone-McLean Model of Information System Success, *The Data Base for Advances in Information Systems*, Vol. 36, No. 2: 8 – 27

Ilieva, J., Baron, S. and Healey, N.M., (2002), Online surveys in marketing research: pros and cons, *International Journal of Marketing Research*, Vol. 44, Quarter 3: 361 – 376

Im, I., Hong, S. and Kang, M.S., (2011), An international comparison of technology adoption. Testing the UTAUT Model, *Information & Management*, Vol. 48, Issue 1: 1 - 8

Im, I., Kim, Y. and Han, H.-J., (2008), The effects of perceived risk and technology type on users' acceptance of technologies, *Information & Management*, 45: 1 - 9

Iqbal, Z., Verma, R. and Baran, R., (2003), Understanding Consumer Choices and Preferences in Transaction-Based e-Services, *Journal of Service Research*, Vol. 6, No. 1: 51 - 65

Ives, B. and Olson, M.H., (1984), User Involvement And MIS Success: A Review Of Research, *Management Science*, Vol. 30, No. 5: 586 – 603

J

Jacoby, J. and Matell, M.S., (1971), Three-Point Likert Scales Are Good Enough, *Journal of Marketing Research*, Vol. VIII, November: 495 - 500

Jacoby, J. and Olson, J.C., (1974), An Extended Expectancy Model Of Consumer Comparison Processes, *Advances in Consumer Research*, Vol. 1, Issue 1: 319 - 333

Jahng, J., Jain, H. and Ramamurthy, K., (2001), The Impact of Electronic Commerce Environment on User Behavior, *e-Service Journal*, Vol. 1., No. 1: 41 – 53

James, W.L. and Sonner, B.S., (2001), Just Say No to Traditional Student Samples, *Journal of Advertising Research,* September/October: 63 – 71

Janiszewski, C. and Chandon, E., (2007), Transfer-Appropriate Processing, Response Fluency, and the Mere Measurement Effect, *Journal of Marketing Research*, Vol. XLIV, May: 309 - 323

Jansen, R.M., (2002), *E-Formulas - Strategy Design Success*, Universal Press, Veenendaal, Ph.D thesis, University of Amsterdam

Jasperson, J., Carter, P.E. and Zmud, R.W., (2005), A Comprehensive Conceptualization of Post-Adoptive Behaviors Associated with Information Technology Enabled Work Systems, *MIS Quarterly*, Vol. 29, No. 3: 525 – 557

Jelassi, T. and Enders, A., (2005), *Strategies for eBusiness*, Prentice Hall, Harlow

Jiang, J.J., Hsu, M.K., Klein, G. and Lin, B., (2000), E-commerce user behavior model: an empirical study, *Human Systems Management*, 19: 265 – 276

Jiang, Z. and Benbasat, I., (2004), Virtual Product Experience: Effects of Visual and Functional Control of Products on Perceived Diagnosticity and Flow in Electronic Shopping, *Journal of Management Information Systems*, Vol. 21, No. 3: 111 – 147

Johnson, E.J., (2001), Digitizing Consumer Research, *Journal of Consumer Research*, Vol. 28, September: 331 – 336

Johnson, E.J., (2006), Things That Go Bump in the Mind: How Behavioral Economics Could Invigorate Marketing, *Journal of Marketing Research*, Vol. XLIII, August: 337 - 340

Johnson, E.J. and Meyer, R.J., (1984), Compensatory Choice Models of Noncompensatory Processes: The Effect of Varying Context, *Journal of Consumer Research*, Vol. 11, June: 528 - 541

Johnson, E.J. and Payne, (1985), Effort And Accuracy In Choice, *Management Science*, Vol. 31, No. 4: 395 - 414

Johnson, E.J. and Russo, J.E., (1984), Product Familiarity and Learning New Information, *Journal of Consumer Research*, Vol. 11, June: 542 – 550

Johnson, E.J., Meyer, R.J. and Ghose, S., (1989), When Choice Models Fail: Compensatory Models in Negatively Correlated Environments, *Journal of Marketing Research*, Vol. XXVI, August: 255 - 270

Johnson, E.J., Meyer, R.J., Hardie, B.G.S. and Anderson, P., (1997), Watching Customers Decide, *Marketing Research*, Winter: 32 - 37

Johnson, E.J., Moe, W.W., Fader, P.S., Bellman, S. and Lohse, G.L., (2004), On the Depth and Dynamics of Online Search Behavior, *Management Science*, Vol. 50, No. 3: 299 – 308

Johnson, M.D., (1984), Consumer Choice Strategies for Comparing Noncomparable Alternatives, *Journal of Consumer Research*, Vol. 11, December: 741 - 753

Johnson, M.D. and Lehmann, D.R., (1997), Consumer Experience and Consideration Sets for Brands and Categories, *Advances in Consumer Research*, Vol. 24: 295 - 300

Jones, K. and Biassotto, M., (1999), Internet retailing: current hype or future reality?, *The International Review of Retail, Distribution and Consumer Research*, 9:1, January: 69 – 79

Jones, M.R. and Karsten, H., (2009), Divided by a Common Language? A Response to Marshall Scott Poole, *MIS Quarterly*, Vol. 33, No. 3: 589 - 595

Jones, T.O. and Sasser Jr., W.E., (1995), Why Satisfied Customers Defect, *Harvard Business Review*, November – December: 88 – 99

Jung, H. and Kim, W., (2005), Investigating the Effects of Consumer Innovativeness on Shape of Consideration Sets: Focusing on Comparison between Consideration Sets of Innovators and Non-innovators, *Advances in Consumer Research*, Vol. 32: 212: 218

Jung, M.-L. and Berthon, P., (2009), Fulfilling the Promise: A Model for Delivering Successful Online Health Care, *Journal of Medical Marketing: Device, Diagnostics and Pharmaceutical Marketing*, Vol. 9, No. 3: 243 - 254

Jung, Y., Perez-Mira, B. and Wiley-Patton, S., (2009), Consumer adoption of mobile TV: Examining psychological flow and media content, *Computers in Human Behavior*, 25: 123 - 129

Junglas, I.A. and Watson, R.T., (2004), National Culture and Electronic Commerce, *e-Service Journal*, Vol. 3, No. 2: 3 - 34

K

Kaarst-Brown, M.L. and Evaristo, J.R., (2004), Perceived Threats and Opportunities: A Preliminary Model of the Book Retailer Internet Presence Decision, *Journal of Organizational Computing and Electronic Commerce*, 14, (4): 269 – 283

Kabadayi, S., Eyuboglu, N. and Thomas, G.P., (2007), The Performance Implications of Designing Multiple Channels to Fit with Strategy and Environment, *Journal of Marketing*, Vol. 71, October: 195 - 211

Kacen, J.J. and Lee, J.A., (2002), The Influence of Culture on Consumer Impulsive Buying Behavior, *Journal of Consumer Psychology*, 12, (2): 163 – 176

Kahai, S.S. and Cooper, R.B., (2003), Exploring the Core Concepts of Media Richness Theory: The Impact of Cue Multiplicity and Feedback Immediacy on Decision Quality, *Journal of Management Information Systems*, Vol. 20, No. 1: 263 - 299

Kahneman, D., (2003), Maps of Bounded Rationality: Psychology for Behavioral Economics, *The American Economic Review*, Vol. 93, No. 5: 1449 - 1475

Kahneman, D. and Thaler, R.H., (2006), Utility Maximization and Experienced Utility, *Journal of Economic Perspectives*, Vol. 20, No. 1: 221 - 234

Kahneman, D. and Tversky, A., (1979), Prospect Theory: An Analysis of Decision under Risk, *Econometrica*, 47 (2): 263 – 291

Kahneman, D., Knetsch, J.L. and Thaler, R.H., (1991), The Endowment Effect, Loss Aversion, and Status Quo Bias *Journal of Economic Perspectives*, Vol. 5, Number 1: 193 – 206

Kaltcheva, V.D. and Weitz, B.A., (2006), When Should a Retailer Create an Exciting Store Environment?, *Journal of Marketing*, Vol. 70, January: 107 – 118

Kamakura, W.A. and Wedel, M., Factor Analysis and Missing Data, *Journal of Marketing Research*, Vol. XXXVII, November: 490 – 498

Kamiak, S.Y.X. and Benbasat, I., (2008), A Two-Process View of Trust and Distrust Building in Recommendation Agents: A Process-Tracing Study, *Journal of the Association for Information Systems*, Vol. 9, Issue 2: 727 - 747

Kamis, A. Koufaris, M. and Stern, T., (2008), Using and Attribute-Based Decision Support System for User-Customized Products Online: An Experimental Investigation, *MIS Quarterly*, Vol. 32, No. 1: 159 – 177

Kang. Y.S. and Lee, H., (2010), Understanding the role of an IT artifact in online service continuance: An extended perspective of user satisfaction, *Computers in Human Behavior*, 26: 353 - 364

Kang, Y.S., Hong, S. and Lee, H., (2009), Exploring continued online service usage behavior: The roles of self-image congruity and regret, *Computers in Human Behavior*, 25: 111 – 122

Kannabiran, G., Xavier, M.J. and Anantharaaj, A., (2004), Enabling E-Governance Through Citizen Relationship Management-Concept, Model And Applications, *Journal of Service Research*, Vol. 4, No. 2: 223 – 240

Kaplan, B. and Duchon, D., (1988), Combining Qualitative and Quantitative Methods in Information Systems Research: A Case Study, *MIS Quarterly*, Vol. 12 No. 4: 571 - 586

Kapur, S., Kumar, B., Banga, G. and Surana, M., (2008), Comparison of Full Profile: Approach and Self-Explicated Approach of Conjoint Analysis, *Journal of Management Research*, Vol. 8, Number 1: 45 - 56

Karahanna, E. and Straub, D.W., (1999), The psychological origins of perceived usefulness and ease-of-use, *Information & Management*, 35: 237 - 250

Karahanna, E., Straub, D.W. and Chervany, N.L., (1999), Information Technology Adoption Across Time: A Cross-Sectional Comparison of Pre-Adoption and Post-Adoption Beliefs, *MIS Quarterly*, Vol. 23, No. 2: 183 – 213

Karahanna, E. and Limayem, M., E-Mail and V-Mail Usage: Generalizing Across Technologies, *Journal of Organizational Computing and Electronic Commerce*, 10, (1): 49 – 66

Karami, A., Rowley, J. and Analoui, F., (2006), Research and Knowledge Building in Management Studies: An Analysis of Methodological Preferences, *International Journal of Management,* Vol. 23, No. 1: 43 - 52

Karjaluoto, H., Mattila, M. and Pento, T., (2002), Factors underlying attitude formation towards online banking in Finland, *International Journal of Bank Marketing*, Vol. 6, No. 4: 261 - 272

Katz, E., (1959), Mass communication research and the study of popular culture: An editorial note on a possible future for this journal, *Studies in Public Communication*, 2: 1 - 6

Katz, E., Blumler, J.G. and Gurevitch, M., (1973), Uses And Gratifications Research, *Public Opinion Quarterly*, Vol. 37, Issue 4: 509 – 523

Kaufman-Scarborough, C. and Childers, T.L, (2009), Understanding Markets as Online Public Places: Insights from Consumers with Visual Impairments, *Journal of Public Policy & Marketing*, Vol. 28, (1): 16 - 28

Keaveney, S.M., (1995), Customer Switching Behavior in Service Industries: An Exploratory Study, *Journal of Marketing*, Vol. 59, April: 71 – 82

Keaveney, S.M. and Parthasarathy, (2001), Customer Switching Behavior in Online Services: An Exploratory Study of the Role of Selected Attitudinal, Behavioral, and Demographic Factors, *Journal of the Academy of Marketing Science*, Vol. 29, No. 4: 374 – 390

Keen, C., Wetzels, M., De Ruyter, K. and Feinberg, R., (2004), E-tailers versus retailers. Which factors determine consumer preferences, *Journal of Business Research*, 57: 685 - 695

Keeter, S., Kennedy, C., Dimock, M., Best, J. and Craighill, P., (2006), Gauging The Impact Of Growing Nonresponse On Estimates From A National RDD Telephone Survey, *Public Opinion Quarterly*, Vol. 70, No. 5: 759 – 779

Keller, G. and Warrack, B., (2000), *Statistics for Management and Economics*, fifth edition, Duxbury, Pacific Grove

Kemp, S. and Grace, R.C., (2010), When Can Information From Ordinal Scale Variables Be Integrated?, *Psychological Methods*, Vol. 15, No. 4: 398 - 412

Kemp, T., (2006), Of Transactions and Transaction Costs: Uncertainty, Policy, and the Process of Law in the Thought of Commons and Williamson, *Journal of Economic Issues*, Vol. XL, No. 1: 45 – 58

Kendall, L., (2009), How Do Issues of Gender and Sexuality Influence the Structures and Processes of Qualitative Internet Research?, in: Markham, A.N. and Baym, N.K. (eds.), *Internet Inquiry*, Sage, Thousand Oaks

Khalifa, M. and Liu, V., (2003), Determinants of Satisfaction at Different Adoption Stages of Internet-Based Services, *Journal of the Association for Information Systems*, Vol. 4, No. 5: 206 - 232

Khalifa, M. and Liu, V., (2005), Online Consumer Retention: Development of New Habits, in: *Proceedings of the 38th Hawaii International Conference on System Sciences*, IEEE

Khan, U., Zhu, M. and Kalra, A., (2011), When Trade-Offs Matter: The Effect of Choice Construal on Context Effects, *Journal of Marketing Research*, Vol. XLVIII, February: 62 – 71

Kiang, M.Y., Gilsdorf, J. and Chi, R.T., (2004), Understand User Preference of Online Shoppers, in: *Proceedings of the 2004 IEEE International Conference on e-Technology, e-Commerce and e-Service (EEE'04)*, IEEE

Kiang, M.Y., Raghu, T.S. and Shang, K.H., (2000), Marketing on the Internet – who can benefit from an online marketing approach?, *Decision Support System*, 27: 383 - 393

Kierzkowski, A., McQuade, S., Waitman, R. and Zeisser, M., (1996), Marketing to the digital consumer, *McKinsey Quarterly*, No. 3: 5 – 21

Kim, B., (2011), Understanding Antecedents of Continuance Intention in Social-Networking Services, *Cyberpsychology, Behavior, and Social Networking*, Vol. 14, Number 4: 199 – 205

Kim, B. and Oh, J., (2011), The difference of determinants of acceptance and continuance of mobile data services: A value perspective, *Expert Systems with Applications*, Vol. 38, Issue 3: 1798 - 1804

Kim, B., Choi, M. and Han, I., (2009), User behaviors toward mobile data services: The role of perceived fee and prior experience, *Expert Systems with Applications*, 36: 8528 - 8536

Kim, G., Shin, B. and Lee, H.G., (2006), A study of factors that affect user intentions toward email service switching, *Information & Management*, 43: 884 – 893

Kim, J. and Forsythe S., (2010), Adoption of dynamic product imagery for online shopping: does age matter?, *The International Review of Retail, Distribution and Consumer Research*, Vol. 20, No. 4: 449 - 467

Kim, J. and Lee, H.-H., (2008), Consumer product search and purchase behaviour using various retail channels: the role of perceived retail usefulness, *International Journal of Consumer Studies*, 32: 619 – 627

Kim, J., Fiore, A.M. and Lee, H.-H., (2007), Influences of online store perception, shopping enjoyment, and shopping involvement on consumer patronage behavior towards an online retailer, *Journal of Retailing and Consumer Services*, Vol. 14, Issue 2: 95 – 107

Kim, H.-W., Xu, Y. and Koh, J., (2004), A Comparison of Online Trust Building Factors between Potential Customers and Repeat Customers, *Journal of the Association for Information Systems*, Vol. 5, No. 10: 392 – 420

Kim, S.S., (2009), The Integrative Framework of Technology Use: An Extension and Test, *MIS Quarterly*, Vol. 33, No. 3: 513 - 537

Kim, S.S. and Malhotra, N.K., (2005), A Longitudinal Model of Continued IS Use: An Integrative View of Four Mechanisms Underlying Postadoption Phenomena, *Management Science*, Vol. 51, No. 5: 741 – 755

REFERENCES

Kim, S.S. and Son, J.-Y., (2009), Out of Dedication or Constraint? A Dual Model of Post-Adoption Phenomena and its Empirical Test in the Context of Online Services, *Expert Systems with Applications*, Vol. 33, No. 1: 49 - 70

Kim.T.G., Lee, J.H. and Law, R., (2008), An empirical examination of the acceptance behaviour of hotel front office systems: An extended technology acceptance model, *Tourism Management*, 29: 500 - 513

Kim, Y.H. and Kim, D.J., (2005), A Study of Online Transaction Self-Efficacy, Consumer Trust, and Uncertainty Reduction in Electronic Commerce Transaction, in: *Proceedings of the 38th Hawaii International Conference on System Sciences*, IEEE

Kim, Y.K., Chun, H.U. and Song, J., (2009), Investigating the role of attitude in technology acceptance from an attitude strength perspective, *International Journal of Information Management*, 29: 67 - 77

King, R.C., Sen, R. and Xia, M., (2004), Impact of Web-based e-Commerce on Channel Strategy in Retailing, *International Journal of Electronic Commerce*, Vol. 8, No. 3: 103 – 130

King, W.R. and He, J., (2006), A meta-analysis of the technology acceptance model, *Information & Management*, 43: 740 – 755

Kink, N. and Hess, T., (2008), Search Engines as Substitutes for Traditional Information Sources? An Investigation of Media Choice, *The Information Society*, 24: 18 – 29

Kivetz, R., Netzer, O. and Srinivasan, V., (2004), Alternative Models for Capturing the Compromise Effect, *Journal of Marketing Research*, Vol. XLI, August: 237 - 257

Kivetz, R., Urminsky, O. and Zheng, Y., (2006), The Goal-Gradient Hypothesis Resurrected: Purchase Acceleration, Illusionary Goal Progress, and Customer Retention, *Journal of Marketing Research*, Vol. XLIII, February: 39 – 58

Kivijärvi, M., Laukkanen, T. and Cruz, P., (2008), Effect of gender on trust in online banking: a cross-national comparison, in: Kautanen, T. and Karjaluoto, H., (eds.): *Trust and New Technologies*, Edward Elgar, Cheltenham, UK

Klaus, T., Gyires, T. and Wen, H.J., (2003), The use of Web-based information systems for non-work activities: An empirical study, *Human Systems Management*, 22: 105 – 114

Klein, L.R. and Ford, G.T., (2003), Consumer search for information in the digital age: an empirical study of prepurchase search for automobiles, *Journal of Interactive Marketing*, Vol. 17, No. 3: 29 – 49

Klein, G., Jiang, J.J. and Cheney, P., (2009), Resolving Difference Score Issues in Information Systems Research, *MIS Quarterly*, Vol. 33, No. 4: 811 - 826

Klenosky, D.B., Gengler, C.E. and Mulvey, M.S., (1993), Understanding the Factors Influencing Ski Destination Choice: A Means-End Analytic Approach, *Journal of Leisure Research*, Vol. 25, No. 4: 362 – 379

Knapp, T.R., (1990), Treating Ordinal Scales as Interval Scales: An Attempt To Resolve the Controversy, *Nursing Research*: Vol. 39, No. 2: 121 - 123

Ko, H., Cho, C.-H. and Roberts, M.S., (2005), Internet Uses And Gratifications, *Journal of Advertising*, Vol. 34, No. 2: 57 – 70

Kock, N., (2009), Information Systems Theorizing Based on Evolutionary Psychology: An Interdisciplinary Review and Theory Integration Framework, *MIS Quarterly*, Vol. 33, No. 2: 395 – 418

Kohli, R. and Jedidi, K., (2007), Representation and Inference of Lexicographic Preference Models and Their Variants, *Marketing Science*, Vol. 26, No. 3: 380 - 399

Kohli, R. Devaraj, S. and Mahmood, M.A., (2004), Understanding Determinants of Online Consumer Satisfaction: A Decision Process Perspective, *Journal of Management Information Systems*, Vol. 21, No. 1: 115 – 135

Koiso-Kantilla, N., (2004), Digital Content Marketing: A Literature Synthesis, *Journal of Marketing Management*, 20: 45 – 65

Kolsaker, A., Lee-Kelley, L. and Choy, P.C., (2004), The reluctant Hong Kong consumer: purchasing travel online, *International Journal of Consumer Studies*, 28, 3: 295 – 304

Komiak, S.Y.X. and Benbasat, I., (2008), A Two-Process View of Trust and Distrust Building in Recommendation Agents: A Process-Tracing Study, *Journal of the Association for Information Systems*, Vol. 9, Issue 12: 727 - 747

Komiak, S.Y.X, Wang, W. and Benbasat, I, (2004/2005), Trust Building in Virtual Salespersons Versus in Human Salespersons: Similarities and Differences, *e-Service Journal*, Vol. 3, Issue 3: 49 - 63

Kong, W. and Hung, Y.S., (2006), Modeling Initial and Repeat Online Trust in B2C E-commerce, in: *Proceedings of the 39th Hawaii International Conference on System Sciences*, IEEE

Konus, U., Verhoef, P.C. and Neslin, S.A., (2008), Multichannel Shopper Segments and Their Covariates, *Journal of Retailing*, 84, 4: 398 - 413

Koo, D.-M., (2006), The fundamental reasons of e-consumers' loyalty to an online store, *Electronic Commerce Research and Applications*, 5: 117 – 130

Koppius, O., Speelman, W., Stulp, O., Verhoef, B. and Van Heck, E., (2005), Why Are Customers Coming Back To Buy Their Airline Tickets Online? Theoretical Explanations and Empirical Evidence, in: *Proceedings of the 7th International Conference on Electronic Commerce*, ICEC'05, ACM

Korgaonkar, P., Silverblatt, R. and Girard, T., (2006), Online retailing, product classifications, and consumer preferences, *Internet Research*, Vol. 16, No. 3: 267 - 288

Korgaonkar, P.K. and Wolin, L.D., (1999), A Multivariate Analysis of Web Usage, *Journal of Advertising Research*, March-April: 53 - 68

Kotler, P., (1980), *Marketing Management*, fourth edition, Prentice-Hall, Englewood Cliffs

Kotler, P. (2003), *Marketing Management*, eleventh edition, Pearson Education, Upper Saddle River

Koufaris, M., (2002), Applying the Technology Acceptance Model and Flow Theory to Online Consumer Behavior, *Information Systems Research*, Vol. 13, No. 2: 205 – 223

Koufaris, M. Kambil, A. and LaBarbera, A., (2001), Consumer Behavior in Web-Based Commerce: An Empirical Study, *International Journal of Electronic Commerce*, Vol. 6, No. 2: 115 – 138

Kowatsch, T. and Maass, W., (2010), In-store consumer behavior: How mobile recommendation agents influence usage intentions, product purchases, and store preferences, *Computers in Human Behavior*, 26: 697 - 704

Koyuncu, C. and Lien, D., (2005), E-commerce and consumer's purchasing behaviour, *Applied Economics*, 35: 721 – 726

Krieger, A.M., Green, P.E. and Wind, Y., (2003), Dual Considerations, *Marketing Research*, Winter: 8 – 13

Krosnikc, J.A., (1991), Response strategies for coping with the cognitive demands of attitude measures in surveys, *Applied Cognitive Psychology*, 5: 213 – 236

Krosnick, J.A., (1999), Survey Research, *Annual Review of Psychology*, 50: 537 - 567

Krosnick, J.A. and Alwin, D.F., (1987), An Evaluation Of A Cognitive Theory Of Response-Order Effects In Survey Measurement, *Public Opinion Quarterly*, Vol. 51: 201 - 219

Kuan, H.-H. and Bock, G.-W., (2007), Trust transference in brick and click retailers: An investigation of the before-online-visit phase, *Information & Management*, Vol. 44, Issue 2: 175 - 187

Kuisma, T., Laukkanen, T. and Hiltunen, M., (2007), Mapping the reasons for resistance to Internet banking: A means-end approach, *International Journal of Information Management*, 27: 75 - 85

Kumar N. and Benbasat, I., (2006), The Influence of Recommendations and Consumer Reviews on Evaluation of Websites, *Information Systems Research*, Vol. 17, No. 4: 425 - 439

Kumar, N., Lang, K.R. and Peng, Q., (2005), Consumer Search Behavior in Online Shopping Environments, in: *Proceedings of the 38th Hawaii International Conference on System Sciences*, IEEE

Kuo, Y.-F., Yen, S.-N., (2009), Towards an understanding of the behavioral intention to use 3G mobile value-added services, *Computers in Human Behavior*, 25: 103 – 110

Kuruzovich, J., Viswanathan, S., Agarwal, R., Gosain, S. and Weitzan, S., (2008), Marketspace or Marketplace? Online Information Search and Channel Outcomes in Auto Retailing, *Information Systems Research*, Vol. 19, No. 2: 182 - 201

Kuusela, H. and Paul, P. (2000), A comparison of concurrent and retrospective verbal protocol analysis, *American Journal of Psychology*, Vol. 113, No. 3: 387 - 404

Kwak, H., Fox, R.J. and Zinkhan, G.M., (2002), What Products Can Be Successfully Promoted and Sold via the Internet?, *Journal of Advertising Research*, January-February: 23 – 38

Kwon, W.-S. and Lennon, S.J., (2009), What induces online loyalty? Online versus offline brand images, *Journal of Business Research*, 62: 557 - 564

Kyl, M.J., Jayachandran, C. and Haverty, J.L., (1988), Expanding Marketing Opportunities With Pre-Need Services, *The Journal of Services Marketing*, Vol. 2, No. 3: 55 - 63

L

LaBarbera, P.L. and Mazursky, D., (1983), A Longitudinal Assessment of Consumer Satisfaction/ Dissatisfaction: The Dynamic Aspect of the Cognitive Process, *Journal of Marketing Research*, Vol. XX, November: 393 – 404

Lai, V.S. and Li, H., (2005), Technology acceptance model for internet banking: an invariance analysis, *Information & Management*, 42: 373 - 386

Lam, J. and Lee, M., (2005), Bridging the Digital Divide – The roles of Internet Self-efficacy towards Learning Computer and the Internet among Elderly in Hong Kong, China, in: *Proceedings of the 38th Hawaii International Conference on System Sciences*, IEEE

Lam, J.C.Y. and Lee, M.K.O., (2006), Digital Inclusiveness – Longitudinal Study of Internet Adoption by Older Adults, *Journal of Management Information Systems*, Vol. 22, No. 4: 177 – 206

Landis, D., Triandis, H.C. and Adamopoulos, (1978), Habit And Behavioral Intentions As Predictors of Social Behavior, *The Journal of Social Psychology*, 106: 227 – 237

Langerak, F., Verhoef, P.C., Verlegh, P.W.J. and De Valck, K., (2004), Satisfaction and Participation in Virtual Communities, *Advances in Consumer Research*, Vol. 31: 56 - 57

Laroche, M., (1978), Four Methodological Problems In Multi-Attribute Attitude Models, *Advances in Consumer Research*, Vol. 5, Issue 1: 175 - 179

Laroche, M., Bergeron, J. and Goutaland, C., (2001), A Three-Dimensional Scale of Intangibility, *Journal of Service Research*, Vol. 4, No. 1: 26 – 38

Laroche, M., Ueltschy, L.C., Abe, S., Cleveland, M. and Yannopoulos, P.P., (2004), Service Quality Perceptions and Customer Satisfaction: Evaluating the Role of Culture, *Journal of International Marketing*, Vol. 12, No. 3: 58 – 85

LaRose, R. and Kim, J., (2007), Share, Steal, or Buy? A Social Cognitive Perspective of Music Downloading, *CyberPsychology & Behavior*, Vol. 10, Issue 2: 267-277,

Larsen, T.J., Sorebo, A.M. and Sorebo, O., (2009), The role of task-technology fit as users' motivation to continue information system use, *Computers in Human Behavior*, 25: 778 – 784

Laukkanen, T., (2006), Customer perceived value of e-financial services: means-end approach, *International Journal of Electronic Finance*, Vol. 1, No. 1: 5 - 17

Laukkanen, T., (2007a), Customer preferred channel attributes in multi-channel electronic banking, *International Journal of Retail & Distribution Management*, Vol. 35, No. 5: 393 - 412

Laukkanen, T., (2007b), Internet vs mobile banking: comparing customer value perceptions, *Business Process Management Journal*, Vol. 13, No. 6: 788 – 797

Laukkanen, T., Sinkkonen, S. and Laukkanen, P., (2009), Communication strategies to overcome functional and psychological resistance to Internet banking, *International Journal of Information Management*, 29: 111 - 118

Lauraeus-Niinivaara, T., Saarinen, T. and Öörni, A., (2007), Knowledge and Choice Uncertainty Affect Consumer Search and Buying Behavior, in: *Proceedings of the 40th Hawaii International Conference on System Sciences*

Layne, K. and Lee, J., (2001), Developing fully functional E-government: A four stage model, *Government Information Quarterly*, 18: 122 – 136

Lazar, J., Feng, J.H. and Hochheiser, H., (2010), *Research Methods in Human-Computer Interaction*, John Wiley and Sons Ltd, Chichester

LeBlanc, R.P. and Turley, L.W., (1994), Retail Influence on Evoked Set Formation and Final Choice of Shopping Goods, *International Journal of Retail & Distribution Management*, Vol. 22, No. 7: 10 - 17

Lederer, A.L., Mirchandani, D.A. and Sims, K., (2001), The Search for Strategic Advantage from the World Wide Web, *International Journal of Electronic Commerce*, Vol. 5, No. 4: 117 – 133

Lee, J. and Rao, H.R., (2009), Task complexity and different decision criteria for online service acceptance: A comparison of two e-government compliance service domains, *Decision Support Systems*, 47: 424 - 435

Lee, J.A., (2000), Adapting Triandis's Model of Subjective Culture and Social Behavior Relations to Consumer Behavior, *Journal of Consumer Psychology*, 9, (2): 117 – 126

Lee, M.-C., (2009), Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit, *Electronic Commerce Research and Applications*, 8: 130 – 141

Lee, K.C. and Chung N., (2009), Understanding factors affecting trust in and satisfaction with mobile banking in Korea: A modified DeLone and McLean's model perspective, *Interacting with Computers*, 21: 385 - 392

Lee, R.P. and Grewal, R., (2004), Strategic Responses to New Technologies and Their Impact on Firm Performance, *Journal of Marketing*, Vol. 68: 157 – 171

Lee, Y. and Kwon, O., (2011), Intimacy, familiarity and continuance intention: An extended expectation-confirmation model in web-based services, *Electronic Commerce Research and Applications*, Vol. 10, Issue 3: 342 - 357

Lee, M.K.O., Cheung, C.M.K., Sia, C.L. and Lim, K.H., (2006), How Positive Informational Social Influence Affects Consumers' Decision of Internet Shopping?, in: *Proceedings of the 39ᵗʰ Hawaii International Conference on System Sciences*, IEEE

Lee, Y., Kozar, K.A. and Larsen, K.R.T., (2003, The Technology Acceptance Model: Past, Present and Future, *Communications of the Association for Information Systems*, Vol. 12: 752 – 780

Legris, P., Ingham, J. and Collerette, P., (2003), Why do people use information technology? A critical review of the technology acceptance model, *Information & Management*, 40: 191 - 204

Lehmann, D.R., Keller, K.L. and Farley, J.U., (2008), The Structure of Survey-Based Brand Metrics, *Journal of International Marketing Association*, Vol. 16, No. 4: 29 - 56

Lehmann, D.R. and Pan, Y., (1994), Context Effects, New Brand Entry, and Consideration Sets, *Journal of Marketing Research*, Vol. XXXI, August: 364 – 374

Leigh, T.W., MacKay, D.B. and Summers, J.O., (1984), Reliability and Validity of Conjoint Analysis and Self-Explicated Weights: A Comparison, *Journal of Marketing*, Vol. XXI, November: 456 - 462

Leitner, M., Wolkerstorfer, P., Sefelin, R. and Tscheligi, M., (2008), Mobile Multimedia: Identifying User Values Using the Means-End Theory, *MobileHCI 2008*, ACM

Lengel, R.H. and Daft, R.L., (1988), the Selection of Communication Media as an Executive Skill, *The Academy of Management Executive*, Vol. II, No. 3: 225 - 232

Levav, J. and Fitzsimons, G.J., (2006), When Questions Change Behavior, *Psychological Science,* Vol. 17, Number 3: 207 - 213

Lévy Mangin, J.-P., Bourgault, N. and Guerrero, M.M., (2011), Modeling Perceived Usefulness On Adopting Online Banking Through The TAM Model In A Canadian Banking Environment, *Journal of Internet Banking and Commerce*, Vol. 16, No. 1: 1 - 23

Lévy Mangin, J.-P., Bourgault, N. Leon, J.A.M. and Guerrero, M.M., (2012), Testing Control, Innovation and Enjoy as External Variables to the Technology Acceptance Model in a North American French Banking Environment, *International Business Research*, Vol. 5, No. 2: 13 - 26

Li, H. and Townsend, L., (2008), Mobile Research In Marketing: Design And Implementation Issues, *International Journal of Mobile Marketing*, Vol. 3, No. 1: 32 - 40

Li, X., Hess, T.J. and Valacich, J.S., (2006), Using Attitude and Social Influence to Develop an Extended Trust Model for Information Systems, *The Data Base for Advances in Information Systems*, Vol. 37, No. 2 & 3: 108 – 124

Liang, H. and Xue, Y., (2009), Avoidance of Information Technology Threats: A Theoretical Perspective, *MIS Quarterly*, Vol. 33, No. 1: 71 - 90

REFERENCES

Liang, T.-P. and Huang, J.-S., (1998), An empirical study on consumer acceptance of products in electronic markets: a transaction cost model, *Decision Support Systems*, 24: 29 – 43

Liang, T.-P. Lai, H.-J. and Ku, Y.-C., (2006), Personalized Content Recommendation and User Satisfaction: Theoretical Synthesis and Empirical Findings, *Journal of Management Information Systems*, Vol. 23, No. 3: 45 – 70

Liao, C., Chen, J.-L. and Yen, D.C., (2007), Theory of planning behavior (TPB) and customer satisfaction in the continued use of e-service: An integrated model, *Computers in Human Behavior*, 23: 2804 - 2822

Liao, C., Palvia, P. and Chen, J.-L., (2009), Information technology adoption behavioral life cycle: Toward a Technology Continuance Theory (TCT), *International Journal of Information Management*, 29: 309 – 320

Liao, Z. and Cheung, M.T., (2002), Internet-based e-banking and consumer attitudes: an empirical study, *Information & Management*, Vol. 39, Issue 4: 283 - 295

Liao, Z. and Cheung, M.T., (2008), Measuring Consumer Satisfaction In Internet Banking: A Core Framework, *Communications of the ACM*, Vol. 51, No. 4: 47 - 51

Liefeld, J., (2003), Consumer research in the land of Oz, *Marketing Research*, Spring: 10 - 15

Lightner, N.J., Yenisey, M.M., Ozok, A.A. and Salvendy, G., (2002), Shopping behaviour and preferences in e-commerce of Turkish and American university students: implications from cross-cultural design, *Behaviour & Information Technology,* Vol. 21, No. 6: 373 - 385

Lim, K.H., Sia, C.L., Lee, M.K.O. and Benbasat, I., (2006), Do I Trust You Online, and If So, Will I Buy? An Empirical Study of Two Trust-Building Strategies, *Journal of Management Information Systems*, Vol. 23, No. 2: 233 – 266

Limayem, M. and Hirt, S.G., (2003), Force of Habit and Information Usage: Theory and Initial Validation, *Journal of the Association for Information Systems*, Vol. 4: 65 – 97

Lin, C. and Nguyen, C., (2011), Exploring E-Payment Adoption In Vietnam And Taiwan, *Journal of Computer Information Systems*, Summer: 41 - 52

Lin, C.-H., Shih, H.-Y. and Sher, P.J., (2007), Integrating Technology Readiness into Technology Acceptance: The TRAM Model, *Psychology & Marketing*, Vol. 24, (7): 641 – 657

Lin, H.-F., (2007), Predicting consumer intentions to shop online: an empirical test of competing theories, *Electronic Commerce Research and Applications*, Vol. 6, Issue 4: 433 - 442

Lin, H.-F., (2011), An empirical investigation of mobile banking adoption: The effect of innovation attributes and knowledge-based trust, *International Journal of Information Management*, Vol. 31, Issue 3: 252 - 260

Lings, I.N., (1999), Balancing Internal and External Market Orientations, *Journal of Marketing Management*, 15: 239 – 263

Little, R.J.A., (1988), Robust Estimation of the Mean and Covariance Matrix from Data with Missing Values, *Applied Statistics*, 37, No. 1: 23 – 38

Little, R.J.A. and Rubin, D.B., (1987), *Statistical Analysis with Missing Data*, John Wiley & Sons, New York

Liu, C. and Forsythe, S., (2011), Examining drivers of online purchase intensity: Moderating role of adoption duration in sustaining post-adoption online shopping, *Journal of Retailing and Consumer Services*, 18: 101 - 109

Liu, C., Marchewka, J.T., Lu, J. and Yu, C.-S., (2005), Beyond concern - a privacy-trust behavioral intention model of electronic commerce, *Information & Management*, 42: 289 – 304

Lo, S.-K. and Lie, t., (2008), Selection of communication technologies – A perspective based on information richness theory and trust, *Technovation*, Vol. 28, Issue 3: 146 - 153

Lockett, A. and Littler D., (1997), The Adoption of Direct Banking Services, *Journal of Marketing Management*, 13: 791 - 811

Loebbecke, C., (1999), Electronic Trading in On-line Delivered Content, in: *Proceedings of the 32nd Hawaii International Conference on System Sciences*, IEEE

Locke, L.F., Spirduso, W.W. and Silverman, S.J., (2007), *Proposals That Work*, fifth edition, Sage, Thousand Oaks

Locken, S.L., Wigington Cross, G., Halbert, L.K., Lindsey, G., Derby, C. and Stanford, C., (2003), Comparing online and non-online shoppers, *International Journal of Consumer Studies*, 27, 2: 126 - 1333

Looney, C., Akbulut, A.Y. and Poston, R.S., (2006), A Social Cognitive Perspective on Channel Preference: A Study of Online Investing, in: *Proceedings of the 39th Hawaii International Conference on System Sciences*, IEEE

Lopes, L.L, (1994), Psychology And Economics: Perspectives on Risk, Cooperation, and The Marketplace, *Annual Review of Psychology*, 45: 197 – 227

Lord, F.M., (1953), On the statistical treatment of football numbers, *American Psychologist*, 8: 750 - 751

Louviere, J.J. (1983), Integrating Conjoint And Functional Measurement With Discrete Choice Theory: An Experimental Design Approach, *Advances in Consumer Research*, Vol. 10, Issue 1: 151 – 156

Louviere, J.J. and Johnson, R.D., (1990), Reliability and Validity of the Brand-Anchored Conjoint Approach to Measuring Retailer Images, *Journal of Retailing*, Vol. 66, Number 4: 359 - 382

Louviere, J.J. and Levin, I.P., (1978), Functional Measurement Analysis Of Spatial And Travel Behavior, *Advances in Consumer Research*, Vol. 5, Issue 1: 435 - 439

Lovelock, C.H., (1983), Classifying Services to Gain Strategic Marketing Insights, *Journal of Marketing*, Vol. 47, Summer: 9 - 20

Lovelock, C.H., (1984), *Service Marketing*, Prentice Hall, Inc., Englewood Cliffs, New Jersey

Lovelock, C. and Gummesson, E., (2004), Wither Services Marketing. In Search of a New Paradigm and Fresh Perspectives, *Journal of Service Research*, Vol. 7, No. 1: 20 – 41

Lovelock., C. and Wirtz, (2006), *Dienstenmarketing*, Pearson Education Benelux, Amsterdam

Lowry, P.B., Spaulding, T., Wells,T., Moody, G., Moffit, K. and Madriaga, S., (2006), A theoretical model and empirical results linking website interactivity and usability satisfaction, in: *Proceedings of the 39th Hawaii International Conference on System Sciences*, IEEE

Lu. H. and Lin, J.C.-C., (2002), Predicting customer behavior in the market-space: a study of Rayport and Sviokla's framework, *Information & Management*, 40: 1 – 10

Lu, Y. and Rucker, M., (2006), Apparel acquisition via single vs. multiple channels: College students's perspectives in the US and China, *Journal of Retailing and Consumer Services*, 13: 35 - 50

Lu, Y., Cao, Y., Wang, B. and Yang, S., (2011), A study on factors that affect users' behavioral intention to transfer usage from the offline to the online channel, *Computers in Human Behavior*, 27: 355 - 364

Lu, Y., Zhou, T. and Wang, B., (2009), Exploring Chinese users' acceptance of instant messaging using the theory of planned behavior, the technology acceptance model, and the flow theory, *Computers in Human Behavior*, 25: 29 – 39

Lucas, E.J. and Ball, L.J., (2005), Think-aloud protocols and the selection task: Evidence for relevance effects and rationalisation processes, *Thinking & Reasoning,* 11, (1): 35 - 66

Lucas, H.C. jr., (2002), *Strategies for electronic commerce and the Internet*, The MIT Press, Cambridge, Massachusetts

Lucas, H.C. jr., Swanson, E.B. and Zmud, R.W., (2007), Implementation, Innovation, and Related Themes Over The Years In Information Systems, *Journal of the Association for Information Systems*, Vol. 8, Issue 4: 206 – 210

Luce, M.F., Bettman, J.R. and Payne, J.W., (2000b), Attribute Identities Matter: Subjective Perceptions of Attribute Characteristics, *Marketing Letters*, 11, 2: 103 – 116

Luce, M.F., Payne, J.W. and J.R. Bettman (2000a), Coping with Unfavorable Attribute Values in Choice, *Organizational Behavior and Human Decision Processes*, Vol. 81, No. 2, March: 274 – 299

Luce, R.D., (1986), Comments on Plott and on Kahneman, Knetsch, and Thaler, *Journal of Business*, Vol. 59, No. 4: 337 - 343

Luce, R.D., (1990), Rational Versus Plausible Accounting Equivalences In Preference Judgments, *Psychological Science*, Vol. 1, No. 4, July: 225 - 234

Luce, R.D. and Von Winterfeldt, D., (1994), What Common Ground Exists for Descriptive, Prescriptive, and Normative Utility Theories?, *Management Science*, Vol. 40, No. 2: 263 – 279

Luo, M.M., Chea, S. and Chen, J.-S., (2011), Web-based information service adoption: A comparison of the motivational model and the uses and gratifications theory, *Decision Support Systems*, Vol. 51, Issue 1: 21 – 30

Lurie, N.H., (2004), Decision Making in Information-Rich Environments: The Role of Information Structure, *Journal of Consumer Research*, Vol.30, March: 473 - 486

Lutz, R.J., (1975), Changing Brand Attitudes Through Modification of Cognitive Structure, *Journal of Consumer Research*, Vol. 1, March: 49 - 59

Lynch, J.G. jr., (1982), On the External Validity of Experiments in Consumer Research, *Journal of Consumer Research*, Vol. 9, December: 225 - 239

Lynch, J.G. jr., (1985), Uniqueness Issues in the Decompositional Modeling of Multiattribute Overall Evaluations: An Information Integration Perspective, *Journal of Marketing Research*, Vol. XXII, February: 1 – 19

Lynch, J.G. jr., (1999), Theory and External Validity, *Journal of the Academy of Marketing Science*, Vol. 27, No. 3: 367 - 376

M

Madhavaram, S.R. and Laverie, D.A., (2004), Exploring Impulse Purchasing on the Internet, *Advances in Consumer Research*, Vol. 31: 59 – 66

Mäenpää, K., Kale, S.H., Kuusela, H. and Mesiranta, N., (2008), Consumer perception of Internet banking in Finland: The moderating role of familiarity, *Journal of Retailing and Consumer Services*, 15: 266 - 276

Maes, R., (2007), An Integrative Perspective on Information Management, in: Huizing, A. and De Vries, E.J., (eds.), *Information Management: Setting the Scene*, Elsevier, Oxford/Amsterdam

Mahajan, V., Muller, E. and Bass, F.M., (1990a) New Product Diffusion Models in Marketing: A Review and Directions for Research, *Journal of Marketing*, Vol. 54, January: 1 - 26

Mahajan, V., Muller, E. and Srivastava, R.K, (1990b), Determination of Adopter Categories by Using Innovation Diffusion Models, *Journal of Marketing Research*, Vol. XXVII, February: 37 - 50

Mahmood, M.A., Bagchi, K, and Ford, T.C., (2004), On-line Shopping Behavior: Cross-Country Empirical Research, *International Journal of Electronic Commerce*, Vol. 9, No. 1: 9 – 30

Maio, G.R. and Haddock, G., (2009), *The Psychology of Attitudes and Attitude Change*, Sage, London

Malhotra, N., (2008), Completion Time And Response Order Effects In Web Surveys, *Public Opinion Quarterly*, Vol. 72, No. 5: 914 – 934

Malhotra, N., (2009), Order Effects In Complex And Simple Tasks, *Public Opinion Quarterly*, Vol. 73, No. 1: 180 - 198

Mallat, N., (2007), Exploring consumer adoption of mobile payments – A qualitative study, *Journal of Strategic Information Systems*, 16: 413 - 432

Maltby, A., Chudry, F. and Wedande, G., 2003), Cyber dudes and cyber babes: Gender differences and internet financial services, *Journal of Financial Services Marketing*, Vol. 8, n: 152 – 163

Mandel, N. and Johnson, E.J., (2002), When Web Pages Influence Choice: Effects of Visual Primes on Experts and Novices, *Journal of Consumer Research*, Vol. 29, September: 235 - 245

Mantel, S.P. and Kardes, F.R., (1999), The Role of Direction of Comparison, Attribute-Based Processing, and Attitude-Based Processing in Consumer Preference, *Journal of Consumer Research*, Vol. 25, March: 335 - 352

Manyiwa, S. and Crawford, I., (2002), Determining linkages between consumer choices in a social context and the consumer's values: A means-end approach, *Journal of Consumer Behaviour*, Vol. 2, No. 1: 54 - 70

March, J.G., (1994*), A Primer On Decision Making*, The Free Press, New York

March, J.G. and Simon, H., (1958), *Organizations*, Wiley, New York

Markham, A.N. and Baym, N.K., (eds.), (2009), *Internet Inquiry*, Sage, Los Angeles

Markus. M.L. and Robey, D., (1988), Information Technology And Organizational Change: Causal Structure In Theory And Research, *Management Science*, Vol. 34 No. 5: 583 - 598

Maronick, T., (2011), Pitting the Mall Against the Internet In Advertising-Research Completion, *Journal of Advertising*, March: 321 - 331

Marshall, R., Lee, C.K. and Sum, J.Y., (1995), Toward the External Validity of the Information Integration Paradigm, *Advances in Consumer Research*, Vol. 22: 78 - 83

Mason, R.O., (1978), Measuring Information Output: A Communication Systems Approach, *Information & Management*, 1, 5: 219 - 234

Massad, N., Heckman, R. and Crowston, K., (2006), Customer Satisfaction with Electronic Service Encounters, *International Journal of Electronic Commerce*, Vol. 10, No.4: 73 – 104

Massy, W.F., (1965), Discriminant Analysis of Audience Characteristics, *Advertising Research*, No. 1: 39 - 48

Massey, A.P., Khatri, V. and Montoya-Weiss, M.M., (2007), Usability of Online Services: The Role of Technology Readiness and Context, *Decision Sciences*, Vol. 38, Number 2: 277 – 308

Mata, F.J., Fuerst, W.L. and Barney, J.B., (1995), Information Technology and Sustained Competitive Advantage: A Resource-Based Analysis, *MIS Quarterly*, December: 487 - 505

Mathieson, K., (1991), Predicting User Intentions: Comparing the Technology Acceptance Model with the Theory of Planned Behavior, *Information Systems Research*, 2:3: 173 – 191

Mathieson, Peacock, E. and Chin, W.W., (2001), Extending the Technology Acceptance Model: The Influence of Perceived User Resources, *The Data Base for Advances in Information Systems*, Vol. 32, No. 3: 86 - 112

Mathwick, C., Malhotra, N. and Rigdon, E., (2001), Experiential value: conceptualization, measurement and application in the catalog and Internet shopping environment, *Journal of Retailing*, 77: 39 -56

Mathy, R.M., Schillace, M., Coleman, S.M. and Berquist, B.E., (2002), Methodological Rigor with Internet Samples: New Ways to Reach Underrepresented Populations, *CyberPsychology & Behavior*, Vol. 5, No. 3: 253 - 266

Maxwell, J.A., (2005), *Qualitative Research Design*, second edition, Sage Publications, Thousand Oaks

May, C., (2002), *The Information Society*, Polity Press, Cambridge, United Kingdom

Mayer, R.C., Davis, J.H. and Schoorman, F.D., (1995), An Integrative Model Of Organizational Trust, *Academy of Management Review*, Vol. 20, No. 3: 709 – 734

Mazis, M.B., Ahtola, O.T. and Klippel, R.E., (1975), A Comparison of Four Multi-Attribute Models in the Prediction of Consumer Attitudes, *Journal of Consumer Research*, Vol. 2, June: 38 – 52

McAlister, L., (1979), Choosing Multiple Items from a Product Class, *Journal of Consumer Research*, Vol. 6, December: 213 – 224

McCloskey, D., (2003), Evaluating Electronic Commerce Acceptance With The Technology Acceptance Model, *Journal of Computer Information Systems*, Winter 2003-2004: 49 – 57

McCloskey, D.N., (1985), The Loss Function Has Been Mislaid: The Rhetoric of Significance Tests, *AEA Papers And Proceedings*, May: 201 – 205

McCloskey, D.N. and Ziliak, S.T., (2008), Signifying nothing: reply to Hoover and Siegler, *Journal of Economic Methodology*, Vol. 15, No. 1: 39 – 55

McCullough, D., (2002), A User's Guide to Conjoint Analysis, *Marketing Research*, Summer: 18 - 23

McDaniel, C. and Gates, R., (1993), *Contemporary Marketing Research*, second edition, West Publishing Company, Minneapolis/St. Paul

McGoldrick, P.J. and Collins, N., (2007), Multichannel Retailing: Profiling the Multichannel Shopper, *International Review of Retail, Distribution and Consumer Research*, Vol. 17, No. 2: 139 – 158

McGrath, J.E. and Brinberg, D., (1983), External Validity and the Research Process: A Comment on the Calder/Lynch Dialogue, *Journal of Consumer Research*, Vol. 10, June: 115 - 124

McGuire, W.J., (1976), Some Internal Psychological Factors Influencing Consumer Choice, *Journal of Consumer Research*, Vol. 2, March: 302 - 319

McKechnie, S., Winklhofer, H. and Ennew, C., (2006), Applying the technology acceptance model to the online retailing of financial services, *International Journal of Retail & Distribution Management*, Vol. 34, No. 4/5: 388 – 410

McKinney, L.N., (2004), Creating a satisfying internet shopping experience via atmospheric variables, *International Journal of Consumer Studies*, 28, 3: 268 - 283

McKinney, V., Yoon, K. and Zahedi, F., (2002), The Measurement of Web-Customer Satisfaction: An Expectation and Disconfirmation Approach, *Information Systems Research*, Vol. 13, No. 3: 296 - 315

McKnight, D.H., Choudhury, V. and Kacmar, C., (2002), Developing and Validating Trust Measures for e-Commerce: An Integrative Typology, *Information Systems Research*, Vol. 13, No. 3: 334 – 359

McKnight, D.H., Kacmar, C.J. and Choudhury, V., (2004), Dispositional Trust and Distrust Distinctions in Predicting High- and Low-Risk Internet Expert Advice Site Perceptions, *e-Service Journal*, Vol. 3, No. 2: 35 – 58

McMellon, C.A., Schiffman, L.G. and Sherman, E., (1997), Consuming Cyberseniors: Some Personal and Situational Characteristics That Influence Their On-Line Behavior, *Advances in Consumer Research*, Vol. 24: 517 – 521

McMillan, S.J., Hwang, J.-S. and Lee, G., (2003), Effects of Structural and Perceptual Factors on Attitudes toward the Website, *Journal of Advertising Research*, December: 400 - 409

McNemar, Q, (1946), Opinion-attitude methodology, *Psychological Bulletin*, Vol. 43, 4: 289 - 374

McWilliams, A. and Smart, D.L., (1993), Efficiency v. Structure-Conduct-Performance: Implications for Strategy Research and Practice, *Journal of Management*, Vol. 19, No. 1: 63 – 78

Melnick, E.L., Colombo, R., Tashjian, R. and Melnick, K.R., (1991), Sampled Survey Data: Quota Samples Versus Probability Samples, *Advances in Consumer Research*, Vol. 18: 576 - 582

Meuter, M.L., Bitner, M.J., Ostrom, A.L. and Brown, S.W., (2005), Choosing Among Alternative Service Delivery Modes: An Investigation of Customer Trial of Self-Service Technologies, *Journal of Marketing*, Vol. 69, April: 61 – 83

Michaelidou, N., Arnott, D.C. and Dibb, Sally, (2005), Characteristics of Marketing Channels: A Theoretical Framework, *Marketing Review*, Vol. 5, Issue 1: 45 - 57

Michell, J., (1986), Measurement Scales and Statistics: A Clash of Paradigms, *Psychological Bulletin*, Vol. 100, No. 3: 398 - 407

Miller, L.E. and Grush, J.E., (1988), Improving Predictions In Expectancy Theory Research: Effects Of Personality, Expectancies, And Norms, *Academy of Management Journal*, Vol. 31, No. 1: 107 - 122

Mingers, J., (2001), Combining IS Research Methods: Towards a Pluralistic Methodology, *Information Systems Research*, Vol. 12, No. 3: 240 – 259

MIngers, J., (2004), Real-izing information systems: critical realism as an underpinning philosophy for information systems, *Information and Organization*, 14: 87 – 103

Mingers, J. and Willcocks, (2004), Preface, in: Mingers, J. and Willcocks, L. (eds.): *Social Theory and Philosophy for Information Systems*, John Wiley and Sons Ltd, Chicester

Misuraca, G.C., (2009), e-Government 2015: exploring m-government scenarios, between ICT-driven experiments and citizen-centric implications, *Technology Analysis & Strategic Management*, Vol. 21, No. 3: 407 – 424

Mitchell, T.R. and Beach, L.R., (1976), A review of occupational preference and choice research using expectancy theory and decision theory, *Journal of Occupational Psychology*, 49: 231 - 248

Mittal, V. and Kamkura, W.A., (2001), Satisfaction, Repurchase Intent, and Repurchase Behavior: Investigating the Moderating Effect of Customer Characteristics, *Journal of Marketing Research*, Vol. XXXVIII, February: 131 – 142

Mitzner, T., Boron, J.B., Fausset, C.B., Adams, A.E., Charness, N., Czaja, S.J., Dijkstra, K., Fisk, A.D., Rogers, W.A. and Sharit, J., (2010), Older adults talk technology: Technology usage and attitudes, *Computers in Human Behavior*, 26: 1710 - 1721

Miyazaki, A.D. and Fernandez, A., (2001), Consumer Perceptions of Privacy and Security Risks for Online Shopping, *The Journal of Consumer Affairs*, Vol. 35, No. 1: 27 – 44

Moe, W.W., (2003), Buying, Searching, or Browsing: Differentiating Between Online Shoppers Using In-Store Navigational Clickstream, *Journal of Consumer Psychology*, 13, (1&2): 29 – 39

Moe, W.W., (2006), An Empirical Two-Stage Choice Model with Varying Decision Rules Applied to Internet Clickstream Data, *Journal of Marketing Research*, Vol. XLIII, November: 680 – 692

Moe, W.W. and Fader, P.S., (2003), Uncovering Patterns in Cybershopping, *California Management Review, Vol. 43*, No. 4: 106 - 117

Moe, W.W. and Fader, P.S.,(2004), Dynamic Conversion Behavior at E-Commerce Sites*, Management Science*, Vol. 50, No. 3: 326 – 335

Mohr, L.B., (1982), *Explaining Organizational Behavior*, Jossey-Bass Publishers, San Francisco

Moore, G.C. and Benbasat, I., (1991), Development of an Instrument to Measure the Perceptions of Adopting an Information Technology Innovation*, Information Systems Research*, 2, 3: 192 - 222

Moorthy, S., Ratchford, B.T. and Talukdar, D.,(1997), Consumer Information Search Revisited: Theory and Empirical Analysis, *Journal of Consumer Research*, Vol. 23, March: 263 - 277

Morganosky, M.A., and Cude, B.J., (2000), Consumer response to online grocery shopping, *International Journal of Retail & Distribution Management*, Vol. 28, Number 1: 17 – 26

Moriarty, R.T. and Moran, U., (1990), Managing Hybrid Marketing Systems, *Harvard Business Review*, November/December: 146 - 155

Morris, J.D., Woo, C. and Singh, A.J., (2005), Elaboration likelihood model: A missing intrinsic emotional implication, *Journal of Targeting, Measurement and Analysis for Marketing*, Vol. 14, 1: 79 - 98

Morris, M.G. and Venkatesh, V., (2000), Age Differences In Technology Adoption Decisions: Implications For A Changing Work Force, *Personnel Psychology*, 53: 375 – 403

Morrison, P.D. and Roberts, J.H., (1998), Matching Electronic Distribution Channels to Product Characteristics: The Role of Congruence in Consideration Set Formation, *Journal of Business Research*, 41: 223 – 229

Morwitz, V.G., Johnson, E. and Schmittlein, D., (1993), Does Measuring Intent Change Behavior?, *Journal of Consumer Research*, Vol. 20, June: 46 – 61

Mosteller, F. and Rourke, R.E.K., (1973), *Sturdy Statistics*, Addison-Wesley Publishing Company, Reading

Mourali, M., Böckenholt, U. and Laroche, M., (2007), Compromise and Attraction Effects under Prevention and Promotion Motivations, *Journal of Consumer Research*, Vol. 34, August: 234 247

Mudambi, S.M. and Schuff, D., (2010), What Makes a Helpful Online Review? A Study of Customer Reviews on Amazon.com, *MIS Quarterly*, Vol. 34, No. 1: 185 - 200

Mudie, P., Cottam, A. and Raeside, R., (2003), An Exploratory Study of Consumption Emotion in Services, *The Service Industries Journal*, Vol. 23, No. 5: 84 – 106

Müller-Lankenau, C., Wehmeyer, K. and Klein, S., (2005), Multi-Channel Strategies: Capturing and Exploring Diversity in the European Retail Grocery Industry, *International Journal of Electronic Commerce*, Vol. 10, No. 2: 85 – 122

Murray, K.B., (1991), A Test of Services Marketing Theory: Consumer Information Acquisition Activities, *Journal of Marketing*, Vol. 55, January: 10 – 25

Muthitacharoen, A., Gillenson, M.L. and Suwan, N., (2006a), Segmenting online customers to manage business resources: A study on the impacts of sales channel strategies on consumer preferences, *Information & Management*, 43: 678 – 695

Muthitacharoen, A., Palvia, P.C., Brooks, L.D., Krishan, B.C., Otondo, R.F. and Retzlaff-Robert, D., (2006b), Reexamining Technology Acceptance in Online Task Behaviours, *Electronic Markets*, Vol. 16, (1): 4 - 15

Muylle, S., Moenaert, R. and Despontin, M., (1999), A grounded theory of World Wide Web search behaviour, *Journal of Marketing Communications*, 5: 143 – 155

Muylle, S., Moenaert, R. and Despontin, M., (2004), The conceptualization and empirical validation of web site user satisfaction, *Information & Management*, 41: 543 - 560

Myers, J.B., Pickersgill, A.D. and Van Metre, E.S., (2004), Steering customers to the right channels, *McKinsey Quarterly*, Issue 4: 36 – 47

REFERENCES

N

Nakanishi, M. and Bettman, J.R., (1974), Attitude Models Revisited: an Individual Level Analysis, *Journal of Consumer Research*, Vol. 1, December: 16 - 21

Narayana, C.L. and Markin, R.J., (1975), Consumer Behavior and Product Performance: An Alternative Conceptualization, *Journal of Marketing*, Vol. 39, October: 1 - 6

Neal, W.D., (1999), Satisfaction is Nice, But Value Drives Loyalty, *Marketing Research*, Spring: 21 - 23

Nedungani, P., (1990), Recall and Consumer Consideration Sets: Influencing Choice without Altering Brand Evaluations, *Journal of Consumer Research*, Vol. 17, December: 263 - 276

Nelmapius, A.H., Boshoff, C., Calitz, A.P. and Klemz, B.R., (2005), The impact of the information search variables, time pressure and involvement, on buying behaviour in a three-dimensional hypermedia computer-mediated environment, *South African Journal of Business Management*, 36 (3): 1 – 13

Nelson, R.G., Jolly, C.M., Hinds, M.J., Donis, Y. and Prophete, E., (2005), Conjoint analysis of consumer preferences for roasted peanut products in Haiti, *International Journal of Consumer Studies*, 29, 3: 208 – 215

Neslin, S.A. and Shankar, V., (2009), Key Issues in Multichannel Customer Management: Current Knowledge and Future Directions, *Journal of Interactive Marketing*, 23: 70 - 81

Neslin, S.A., Grewal, D., Leghorn, R., Shankar, V., Teerling, M.L., Thomas, J.S. and Verhoef, P.C., (2006), Challenges and Opportunities in Multichannel Customer Management, *Journal of Service Research*, Vol. 9, No. 2: 95 – 112

Nevejan, C.I.M., (2007), *Presence And The Design Of Trust*, Ph.D thesis, Universiteit van Amsterdam

Newell, B.R. and Shanks, D.R., (2003), Take the Best or Look at the Rest? Factors Influencing "One-Reason" Decision Making, *Journal of Experimental Psychology, Learning, Memory, and Cognition*, Vol. 29, No. 1: 53 – 65

Newell, B.R., Lagnado, D.A. and Shanks, D.R., (2007), *Straight Choices*, Psychology Press, New York

Newholm, T., McGoldrick, P. Keeling, K. Macauly, L. and Doherty, J., (2004), Multi-Story Trust and Online Retailer Strategies, *International Review of Retail, Distribution and Consumer Research*, Vol. 14, No. 4: 437 – 456

Newman, M. and Noble, F., (1990), User Involvement as an Interaction Process: A Case Study, *Information Systems Research*: 1, 1: 89 – 113

Newman, M. and Robey D., (1992), A Social Process Model of User-Analyst Relationships, *MIS Quarterly*, June: 249 - 266

Nguyen, T.T.M., Jung, K., Lantz, G. and Loeb, S.G., An Exploratory Investigation into Impulse Buying Behavior in a Transitional Economy: A Study of Urban Consumers in Vietnam, *Journal of International Marketing*, Vol. 11, No. 2: 13 – 35

Ngwenyama, O.K. and Lee, A.S., (1997), Communication Richness in Electronic Mail: Critical Social Theory and the Contextuality of Meaning, *MIS Quarterly*, June: 145 - 167

Njite, D. and Parsa, H.G., (2005), Structural Equation Modeling Of Factors That Influence Consumer Internet Purchase Intentions Of Services, *Journal of Services Research*, Vol. 5, No. 1: 43 – 59

Noce, A.A. and McKeown, L., (2008), A new benchmark for Internet use: A logistic modeling of factors influencing Internet use in Canada, 2005, *Government Information Quarterly*, Vol. 25, Issue 3: 462 - 476

Nooteboom, B., (1996), Trust, Opportunism and Governance: A Process and Control Model, *Organization Studies*, 17, 6: 985 – 1010

Norman, G., (2010), Likert scales, levels of measurement and the "laws" of statistics, *Advances in Health Science Education*, Vol. 15, Number 5: 625 - 632

Notani, A.S., (1998), Moderators of Perceived Behavioral Control's Predictiveness in the Theory of Planned Behavior: A Meta-Analysis, *Journal of Consumer Psychology*, 7, (3): 247 – 271

Nöteberg, A., Christiaanse, E. and Wallage, P., (2003), Consumer Trust in Electronic Channels, *e-Service Journal*, Vol. 2, No. 2: 46 - 67

Novak, T.P., Hoffman, D.L. and Duhachek, A., (2003), The Influence of Goal-Directed and Experiential Activities on Online Flow Experiences, *Journal of Consumer Psychology*, 13, 1 & 2: 3 – 16

Novemsky, N., Dhar, R., Schwartz, N. and Simonson, I., (2007), Preference Fluency in Choice, *Journal of Marketing Research*, Vol. XLIV, August: 347 – 356

Nowlis, S.M., Dhar, R. and Simonson, I., (2010), The Effect of Decision Order on Purchase Quantity Decisions, *Journal of Marketing Research*, Vol. XLVII, August: 725 - 737

Nysveen, H., Pedersen, P.E., Thorbjørnsen, H., (2005a), Intentions to Use Mobile Services: Antecedents and Cross-Service Comparisons, *Journal of Academy of Marketing Science*, Vol. 33, No. 3: 330 - 346

Nysveen, H., Pedersen, P.E., Thorbjørnsen, H. and Berthon, P. (2005b), Mobilizing the Brand: The Effects of Mobile Services on Brand Relationship and Main Channel Use, *Journal of Service Research*, Vol. 7, No. 3: 257 - 276

O

O'Cass, A. and Fenech, T., (2003), Web retailing adoption: exploring the nature of internet users Web retailing behavior, *Journal of Retailing and Consumer Services*, 10: 81 - 94

Oetzel, J.M., (2004), Differentiation Advantages in the On-line Brokerage Industry, *International Journal of Electronic Commerce*, Vol. 9, No. 1: 105 – 126

Ofir, C., Simonson, I. and Yoon, S.-O., (2009), The Robustness of the Effects of Consumers' Participation in Market Research: The Case of Service Quality Evaluations, *Journal of Marketing*, Vol. 73, November: 105 - 114

Oliver, R.L., (1980), A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions, *Journal of Marketing Research*, Vol. XVII, November: 460 – 469

Oliver, R.L., (1981), Measurement and Evaluation of Satisfaction Processes in Retail Settings, *Journal of Retailing,* Vol. 57, Issue 3: 25 - 49

Oliver, R.L., (1993), Cognitive, Affective, and Attribute Bases of the Satisfaction Response, *Journal of Consumer Research*, Vol. 20, December: 418 – 430

Oliver, R.L., (1999), Whence Consumer Loyalty?, *Journal of Marketing*, Vol. 63: 33 – 44

Oliver, R.L., (2010), *Satisfaction. A behavioral Perspective on the Consumer*, second edition, M.E. Sharpe, Armonk

Oliver, R.L., Rust, R.T. and Varki, S., (1997), Customer Delight: Foundations, Findings, and Managerial Insight, *Journal of Retailing*, Vol. 73, No. 3: 311 – 336

Olshavsky, R.W. and Granbois, D.H., (1979), Consumer Decision Making – Fact or Fiction?, *Journal of Consumer Research*, Vol. 6, September: 93 - 100

Olson, J.M. and Zanna, M.P., (1993), Attitudes And Attitude Change, *Annual Review of Psychology*, 44: 117 - 154

Olson, M.A. and Kendrick, R.V., (2008), Origins of Attitudes, in: Crano, W.D. and Prislin, R. (eds.), *Attitudes and Attitude Change*, Psychology Press, New York

Oosterhaven, J., (2000*), E-business voor gevestigde ondernemingen*, Van Gorcum, Assen

Oppewal, H., Louviere, J.L. and Timmermans, H.J.P., (1994), Modeling Hierarchical Conjoint Processes With Integrated Choice Experiments, *Journal of Marketing Research*, Vol. XXXI, February: 92 – 105

Orlikowski, W.J. and Baroudi, J.J., (1991), Studying Information Technology in Organizations: Research Approaches and Assumptions, *Information Systems Research*, 2, 1, March: 1 - 28

Orlikowski, W.J. and Iacono, C.S., (2001), Research Commentary: Desperately Seeking the "IT" in IT Research – A Call to Theorizing the IT Artifact*, Information Systems Research*, Vol. 12, No. 2, June: 121 – 134

Ortiz de Guinea, A. and Markus, M.L., (2009), Why Break the Habit of a Lifetime? Rethinking the Roles of Intention, Habit, and Emotion in Continuing Information Technology Use, *MIS Quarterly*, Vol.33, No. 3: 433 - 444

Otondo, R.F., Van Scotter, James R., Allen, D.G. and Palvia, P., (2008), The complexity of richness: Media, message, and communication outcomes*, Information & Management*, 45: 21 – 30

Otter, T., Johnson, J., Rieskamp, J., Allenby, G.M., Brazell, J.D., Diederich, A., Hutchinson, J.W., MacEachern, S., Ruan, S. and Townsend, J., (2008), Sequential sampling models of choice: Some recent advances, *Marketing Letters*, 19: 255 – 267

Ozdemir, S. and Trott, P., (2009), Exploring the adoption of a service innovation: A study of Internet banking adopters and non-adopters, *Journal of Financial Services Marketing*, Vol. 13, 4: 284 - 299

Ozdemir, S., Trott, P. and Hoechst, A., (2008), Segmenting internet banking adopters and non-adopters in the Turkish retail banking sector, *International Journal of Bank Marketing*, Vol. 26, No. 4: 212 - 236

P

Pagel M.D. and Davidson, A.R., (1984), A Comparison of Three Social-Psychological Models of Attitude and Behavioral Plan: Prediction of Contraceptive Behavior, *Journal of Personality and Social Psychology*, Vol. 47, No. 3: 517 - 533

Pan, Y. and Lehmann, D.R., (1993), The Influence of New Brand Entry on Subjective Brand Judgments, *Journal of Consumer Research*, Vol. 20, June: 76 - 86

Panagiotou, G., (2003), Bringing SWOT into focus, *Business Strategy Review*, Vol. 14, Issue 2: 8 – 10

Pantzar, M., (1997) Domestication of Everyday Life Technology: Dynamic Views on the Social Histories of Artifacts, *Design Issues*, Vol. 13, Number 3: 52 – 65

Pantzar, M., (2000), Consumption as Work, Play, and Art: Representation of the Consumer in Future Scenarios, *Design Issues*, Vol. 16, Number 3: 3 – 18

Pantzar, M., (2003), Tools Or Toys, *Journal of Advertising*, Vol. 32, No. 1: 83 - 93

Parasuraman, A., (2000), Technology Readiness Index (TRI): A Multiple-Item Scale to Measure Readiness to Embrace New Technologies, *Journal of Service Research*, Vol. 2, No. 4, May: 307 -320

Parasuraman, A. and Grewal, D., (2000), The Impact of Technology on the Quality-Value-Loyalty Chain: A Research Agenda, *Journal of the Academy of Marketing Science*, Vol. 28, No. 1: 168 – 174

Parasuraman, A., Berry, L.L. and Zeithaml, V.A., (1990), Guidelines for Conducting Service Quality Research, *Marketing Research*, December: 34 – 44

Parasuraman, A., Zeithaml, V.A. and Berry, L.L., (1985), A Conceptual Model of Service Quality and Its Implications for Future Research, *Journal of Marketing*, Vol. 49, Fall: 41 – 50

Parasuraman, A., Zeithaml, V.A. and Berry, L.L., (1988), SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality, *Journal of Retailing*, Vol. 64, Number 1: 12 - 40

Parasuraman, A., Zeithaml, V.A. and Malhotra, A., (2005), E-S-QUAL. A Multiple-Item Scale for Assessing Electronic Service Quality, *Journal of Service Research*, Vol. 7, No. 3: 213 – 233

Park, J. and Kim, J., (2005), The Effects of Decoys on Preference Shifts: The Role of Attractiveness and Providing Justification, *Journal of Consumer Psychology*, 15, (2): 94 - 107

Park, Y.-H., Ding, M. and Rao, V.R., (2008), Eliciting Preference for Complex Products: A Web-Based Upgrading Method, *Journal of Marketing Research*, Vol. XLV, October: 562 – 574

Parker, J.R. and Schrift, R.Y., (2011), Rejectable Choice Sets: How Seemingly Irrelevant No-Choice Options Affect Consumer Decision Processes, *Journal of Marketing Research*, Vol. XLVIIII, October: 840 - 854

Parra, J.F. and Ruiz, S., (2009), Consideration sets in online shopping environments: the effects of search tool and information load, *Electronic Commerce Research and Applications*, 8: 252 - 262

Parthasarthy, M. and Bhattacherjee, A., (1998), Understanding Post-Adoption Behavior in the Context of Online Services, *Information Systems Research*, Vol. 9, No. 4: 362 – 379

Patterson, P.G., Johnson, L.W. and Spreng, R.A., (1997), Modeling the Determinants of Customer Satisfaction for Business-to-Business Professional Services, *Journal of Academy of Marketing Sciences*, 25, 1: 4 - 17

Paucar-Caceres, A. and Wright, (2011), Contemporary discourses in Information System Research: Methodological inclusiveness in a sample of Information Systems Journals, *International Journal of Information Management*, 31: 593 - 598

Pavlou, P.A., (2003), Consumer Acceptance of Electronic Commerce: Integrating Trust and Risk with the Technology Acceptance Model, *International Journal of Electronic Commerce*, Vol. 7, No. 3: 101 – 134

Pavlou, P.A. and Gefen, D., (2004), Building Effective Online Marketplaces with Institution-Based Trust, *Information Systems Research*, Vol. 15, No. 1: 37 - 59

Pavlou, P.A. and Fygenson, M., (2006), Understanding and Predicting Electronic Commerce Adoption: An Extension of the Theory of Planned Behavior, *MIS Quarterly*, Vol. 30, No. 1: 115 – 143

Payne, J.W., (1994), Thinking Aloud: Insights Into Information Processing, *Psychological Science*, Vol. 5, No. 5: 241 - 248

Payne, J.W. and Bettman, J.R., (2004), Walking with the Scarecrow: The Information-processing Approach to Decision Research, in: Koehler, D.J. and Harvey, N. (eds.), *Blackwell Handbook of Judgment and Decision Making*, Blackwell Publishing, Malden, Massachusetts

Payne, J.W., Bettman, J.R., Coupey, E. and Johnson, E.J., (1992a), A constructive process view of decision making: Multiple strategies in judgment and choice, *Acta Psychologica*, 80: 107 – 141

Payne, J.W., Bettman, J.R., and Johnson, E.J. (1988), Adaptive Strategy Selection in Decision Making, *Journal of Experimental Psychology: Learning, Memory, and Cognition*, Vol. 14, No. 3: 534 - 552

Payne, J.W., Bettman, J.R. and Johnson, E.J. (1992b), Behavioral Decision Research: A Constructive Processing Perspective, *Annual Review of Psychology*, 43: 87 - 131

Payne, J.W., Bettman, J.R. and Johnson, E.J., (1993), *The Adaptive Decision Maker*, Cambridge University Press, Cambridge

Payne, J.W., Bettman, J.R. and Johnson, E.J., (1997), The adaptive decision maker: Effort and accuracy in choice, in: Goldstein, W.M. and Hogart, R.M. (eds.)*: Research on judgment and decision making*, Cambridge University Press, Cambridge

Payne, J.W., Bettman, J.R. and Luce, M.F., (1996), When Time Is Money: Decision Behavior under Opportunity-Cost Time Pressure, *Organizational Behavior and Human Decision Processes*, Vol. 66, No. 2: 131 - 152

Payne, J.W., Laughhunn, D.J. and Crum, R., (1984), Multiattribute Risky Choice Behavior: The Editing Of Complex Prospects, *Management Science*, 1984, Vol. 30, No. 11: 1350 - 1361

Pechtl, H., (2003), Adoption of online shopping by German grocery shoppers, *The International Review of Retail, Distribution and Consumer Research*, 13/2, April: 143 – 159

Peck, J. and Childers, T.L., (2003), Individual Differences in Haptic Information Processing: The "Need for Touch" Scale*, Journal of Consumer Research*, Vol. 30, December: 430 – 442

Pennington, R., Wilcox, H.D. and Grover, V., (2003), The Role of System Trust in Business-to-Consumer Transactions, *Journal of Management Information Systems*, Vol. 20, No. 3: 197 – 226

Penrose, E., (1959), *The Theory Of The Growth Of The Firm*, paperback edition 1996, Oxford University Press, Oxford

Perea y Monsuwé, T., Dellaert, B.G.C. and De Ruyter, K., (2004), What drives consumers to shop online? A literature review, *International Journal of Service Industry Management*, Vol. 15, No. 1: 102 - 121

Permut, S.E., Michel, A.J. and Joseph, M., (1976), The Researcher's Sample: A Review of the Choice of Respondents in Marketing Research, *Journal of Marketing Research*, Vol. XIII: August: 278 - 283

Perotti, V., Sorce, P. and Widrick, S, (2003), An Exploratory Study of Operant Conditioning Theory as a Predictor of Online Product Selection, *Journal of Electronic Commerce in Organizations*, 1 (1): 42 – 54

Perreault Jr., W.D. and Young, F.W., (1980), Alternating Least Squares Optimal Scaling: Analysis of Nonmetric Data in Marketing Research, *Journal of Marketing Research*, Vol. XVII, February: 1 - 13

Peteraf, M.A., (1991), The Cornerstones of Competitive Advantage: A Resource-Based View, *Strategic Management Journal*, Vol. 14, No. 3: 179 – 191

REFERENCES

Peterson, P.G. and O'Dell, W.F., (1950), Selecting Sampling Methods In Commercial Research, *Journal of Marketing*, Vol. 15 Issue 2: 182 – 189

Peterson, R.A., (2001), On the Use of College Students in Social Science Research: Insights from a Second-Order Meta-analysis, *Journal of Consumer Research*, Vol. 28, December: 450 - 461

Peterson, R.A., Balasubramanian, S. and Bronnenberg, B.J., (1997), Exploring the Implications of the Internet for Consumer Marketing, *Journal of the Academy of Marketing Science*, Vol. 25, No. 4: 329 - 526

Petrof, J.V. and Daghfous, N., (1996), Evoked Set: Myth or Reality?, *Business Horizons*, May-June: 72 – 77

Petty, R.E., (2006), A Metacognitive Model of Attitudes, *Journal of Consumer Research*, Vol. 33, June: 22 - 24

Petty, R.E. and Cacioppo, J.T., (1996), Addressing Disturbing and Disturbed Consumer Behavior: Is It Necessary to Change the Way We Conduct Behavioral Science?, *Journal of Marketing Research*, February: 1- 8

Petty, R.E., Cacioppo, J.T. and D. Schumann, (1983), Central and Peripheral Routes to Advertising Effectiveness: The Moderating Role of Involvement, *Journal of Consumer Research*, Vol. 10, September: 135 – 146

Petty, R.E., Wegener, D.T. and Fabrigar, L.R., (1997), Attitudes And Attitude Change, *Annual Review of Psychology*, 48: 609 - 647

Pfleeger, S.L., Jeffery, R., Curtis, B. and Kitchenham, B., (1997), Status Report on Software Measurement, *IEEE Software*, March/April: 33 – 54

Pfeffers, K., Gengler, C. and Tuunanen, T., (2003), Extending Critical Success Factors Methodology to Facilitate Broadly Participative Information Systems Planning, *Journal of Management Information Systems*, 20, 1: 51-85.

Phelan, S.E. and Lewin, P., (2000), Arriving at a strategic theory of the firm, *International Journal of Management Reviews*, Vol. 2, No. 4: 305 - 323

Picot, A., Bortenlanger, C. and Rohrl, H., (1997), Organizations of Electronic Markets: Contributions from the New Institutional Economics, *The Information Society*, 13: 107 – 123

Pieterson, W., (2009), *Channel Choice. Citizens' Channel Behavior and Public Service Channel Strategy*, Ph.D thesis, University of Twente

Pieterson, W. and Ebbers, W., (2008), The use of service channels by citizens in the Netherlands: implications for multi-channel management, *International Review of Administrative Sciences*, 74, 95 (1): 95 - 110

Pieterson, W. and Van Dijk, J., (2006), Governmental Service Channel Positioning: History and Strategies for the Future, in: Wimmer, M.A, Scholl, H.J, Grönlund, Å., Andersen, K.V (eds.) *EGOV 2006*, LNCS, vol. 4084, Springer

Pieterson, W. and Van Dijk J. (2007), Channel Choice Determinants; An exploration of the factors that determine the choice of a service channel in citizen initiated contacts, in: *The Proceedings of the 8th Annual International Digital Government Research Conference*

Plott, C.R. and Zeiler, K., (2007), Exchange Asymmetries Incorrectly Interpreted as Evidence of Endowment Effect Theory and Prospect Theory?, *The American Economic Review*, Vol. 97, No. 4: 1449 - 1466

Plouffe, C.R., Vandenbosch, M. and Hulland, J., (2000), Why smart cards have failed: looking to consumer and merchant reactions to a new payment technology, *International Journal of Bank Marketing*, 18, 3: 112 – 123

Polatoglu, V.N. and Ekin, S, (2001), An empirical investigation of Turkish consumers' acceptance of internet banking services, *International Journal of Bank Marketing*, Vol. 19, No. 4: 156 - 165

Politser, P., (2008), *Neuroeconomics: A Guide to the New Science of Making Choices*, Oxford University Press, New York

Poon, S., (1999), The Nature of Goods and Internet Commerce Benefit: A Preliminary Study, in: *Proceedings of the 32nd Hawaii International Conference on System Sciences*, IEEE

Popper, K., (1959), *The Logic of Scientific Discovery*, second edition, Hutchinson & Co, London

Popper, K., (1978/2009), *The Two Fundamental Problems of the Theory of Knowledge*, Routledge, London

Porter, M.E., (1980), *Competitive Strategy*, The Free Press, New York

Porter, M.E., (1985), *Competitive Advantage*, The Free Press, New York

Porter, M.E., (1996), What is Strategy, *Harvard Business Review*, November-December: 61 - 78

Porter, M.E., (2001), Strategy and the Internet, *Harvard Business Review*, March: 63 – 78

Porter, M.E. and Millar, V.E., (1985), How information gives you competitive advantage, *Harvard Business Review*, July-August: 149 - 160

Posner, R.A., (1993), Nobel Laureate Ronald Coase and Methodology, *Journal of Economic Perspectives*, Vol. 7, No. 4: 195 – 210

Poster, M., (2001), *What's the Matter with the Internet*, University of Minnesota Press, Minneapolis

Postman, N., (1993), *Technopoly*, Vintage Books, New York

Prahalad, C.K. and Hamel, G., (1990), The Core Competence of the Corporation, *Harvard Business Review*, May-June: 79 – 91

Premkumar, G. and Bhattacherjee, A., (2008), Explaining information technology usage: A test of competing models, *Omega*, 36: 64 - 75

Priem, R.L. and Butler, J.E., (2001), Is The Resource-Based "View" A Useful Perspective For Strategic Management Research?, *Academy of Management Review*, Vol. 26, No. 1: 22 -40

Priester, J.R., Nayakankuppam, D., Fleming, M.A. and Godek, J., (2004), The A2SC2 Model: The Influence of Attitudes and Attitude Strength on Consideration and Choice, *Journal of Consumer Research*, Vol. 30, March: 574 – 587

Puccinelli, N.M., Goodstein, R.C., Grewal, D., Price, R., Raghubir, P. and Stewart, D., (2009), Customer Experience Management in Retailing: Understanding the Buying Process, *Journal of Retailing*, 85, 1: 15 - 30

Punj, G. and Srinivasan, N., (1989), Influence of Expertise and Purchase Experience on the Formation of Evoked Sets, *Advances in Consumer Research*, Vol. 16: 507 – 514

Putnam, R.D., (2000), *Bowling Alone*, Simon & Schuster Paperbacks, New York

Putzke, J., Schoder, D. and Fischbach, K., (2010), Adoption of Mass-Customized Newspapers: An Augmented Technology Acceptance Perspective, *Journal of Media Economics*, 23: 142 - 164

Q

Qingfei, M.I.N., Shaobo, J.I. and Gang, Q.U., (2008), Mobile Commerce User Acceptance Study in China: A Revised UTAUT Model, *Tsinghua Science And Technology*, Vol.. 13, Number 3: 257 - 264

Qiu, L. and Benbasat, I., (2005), An Investigation into the Effects of Text-to-Speech Voice and 3D Avatars on the Perception of Presence and Flow of Live Help in Electronic Commerce, *ACM Transactions on Computer-Human Interaction*, Vol. 12, No. 4: 329 - 355

R

Rai, A., Lang, S.S. and Welker, R.B., (2002), Assessing the Validity of IS Success Models: An Empirical Test and Theoretical Analysis, *Information Systems Research*, Vol. 13, No. 1: 50 – 69

Rai, A., and Sambamurthy, V.,(2006), Editorial Notes – The Growth of Interest in Service Management: Opportunities for Information Systems Scholars, *Information Systems Research*, Vol. 17, No. 4: 327 - 331

Rapoport, A. and Wallsten, T.S., (1972), Individual Decision Behavior, *Annual Review of Psychology*, Vol. 23, Issue 1: 131 - 176

Ramaswami, S.N., Strader, T.J. and Brett, K., (2000), Determinants of On-Line Channel Use for Purchasing Financial Products, *International Journal of Electronic Commerce*, Vol. 5, No. 2: 95 – 118

Ramayah, T., Yusoff, Y.M., Jamaludin, N. and Ibrahim, A., (2009), Applying the Theory of Planned Behavior (TPB) to Predict Internet Tax Filing Intentions, *International Journal of Management*, Vol. 26, No. 2: 272 - 284

Ranchhod, A. and Gurau, C., (1999), Internet-enabled distribution strategies, *Journal of Information Technology*, 14: 333 – 346

Rangaswamy, A. and Van Bruggen, G.H., (2005), Opportunities and challenges in multichannel marketing: an introduction to the special issue, *Journal of Interactive Marketing*, Vol. 19, No. 2: 5 – 11

Rao, P.K. (2003), *The Economics of Transaction Costs*, Palgrave Macmillan, Houndmills, Basingstoke, Hampshire

Ratchford, B.T., Lee, M., Talukdar, D., (2003), The Impact of the Internet on Information Search for Automobiles, *Journal of Marketing Research*, Vol. XL, May: 193 – 209

Ratchford, B.T., Talukdar, D. and Lee, M.-S., (2001), A Model of Consumer Choice of the Internet as an Information Source, *International Journal of Electronic Commerce*, Vol. 5, No. 3: 7 - 21

Ratneshwar, S., Shocker, A.D. and Stewart, D.W., (1987), Toward Understanding the Attraction Effect: The Implications of Product Stimulus Meaningfulness and Familiarity, *Journal of Consumer Research*, Vol. 13, March: 520 - 533

Rayner, J.C.W. and Best, D.J., (2000), *A Contingency Table Approach to Nonparametric Testing*, Chapman & Hall, Boca Raton

Rayport, J.F. and Sviokla, J.J., (1995), Exploiting the Virtual Value Chain, *Harvard Business Review*, November – December: 75 – 85

Reardon, J., Miller, C., Hasty, R. and Waguespack Jr., B, (1996), A Comparison Of Alternative Theories Of Services Marketing, *Journal of Marketing Theory And Practice*, Fall: 61 - 71

Reichheld, F.F., (1993), Loyalty-Based Management, *Harvard Business Review*, March-April: 64 - 73

Reichheld, F.F., (1996), Learning from Customer Defections, *Harvard Business Review*, March-April: 56 - 69

Reichheld, F.F., Markey Jr., R.G., Hopton, C., (2000), E-customer loyalty – applying the traditional rules of business for online success, *European Business Journal*, Vol. 12, Issue 4: 173 - 179

Reichheld, F.F. and Sasser, W.E. Jr., (1990), Zero Defections: Quality Comes to Services, *Harvard Business Review*, September-October: 105 – 111

Reichheld, F.F. and Schefter, P., (2000), E-Loyalty, *Harvard Business Review*, July – August: 105 - 113

Reinartz, W., Thomas, J.S. and Kumar, V., (2005), Balancing Acquisition and Retention Resources to Maximize Customer Profitability, *Journal of Marketing*, Vol. 69, January: 63 - 79

Rensel, A.D., Abbas, J.M. and Rao, H.R., (2006), Private Transactions in Public Places: An Exploration of the Impact of the Computer Environment on Public Transactional Web Site Use, *Journal of the Association for Information Systems*, Vol. 7, No. 1: 19 – 51

Reynolds, T.J., (1985), Implications for Value Research: A Macro Vs. Micro Perspective, *Psychology & Marketing*, Vol. 2, No. 4: 297 – 305

Reynolds, T.J., (2006), Methodological and Strategy Development Implications of Decision Segmentation, *Journal of Advertising*, December: 445 - 460

Reynolds, T.J. and Gutman, J., (1988), Laddering Theory, Method, Analysis, And Interpretation, *Journal of Advertising Research*, February/March: 11 – 31

Reynolds, T.J. and Whitlark, D.B., (1995), Applying Laddering Data To Communications Strategy And Advertising Practice, *Journal of Advertising Research*, July/August: 9 – 17

Rice, R.E. and Shook, D.E., (1990), Relationships of job categories and organizational levels of use of communication channels, including electronic mail: a meta-analysis and extension, *Journal of Management Studies*, 27, 2: 195 – 229

Richardson, H. and Robinson, B., (2007), The mysterious case of the missing paradigm: a review of critical information systems research 1991 – 2001, *Information Systems Journal*, 17: 251 - 270

Riley, M., Wood, R.C., Clark, M.A., Wilkie, E. and Szivas, E., (2000), *Researching and Writing Dissertations in Business and Management*, Thomson, London

Rindfleisch. A. and Heide, J.B., (1997), Transaction Cost Analysis: Past, Present, and Future Applications, *Journal of Marketing*, Vol. 61, October: 30 – 54

Roberts, J.H. and Lattin, J.M., (1991), Development and Testing of a Model of Consideration Set Composition, *Journal of Marketing Research*, Vol. XXVIII, November: 429 – 440

Roberts, J.H. and Lattin, J.M., (1997), Consideration: Review of Research and Prospects for Future Insights, *Journal of Marketing Research*, Vol. XXXIV, August: 406 – 410

Roberts, M., Xu, X.M. and Mettos, N., (2003), Internet Shopping: The Supermarket Model and Consumer Perceptions, *Journal of Electronic Commerce in Organizations*, 1, (2): 32 - 43

Roca, J.C., Chiu, c.-M. and Martinez, F.J., (2006), Understanding e-learning continuance intention: An extension of the Technology Acceptance Model, *International Journal of Human-Computer Studies*, 64: 683 - 696

Rodgers, S. and Harris, M.A., (2003), Gender and E-Commerce: An Exploratory Study, *Journal of Advertising Research*, September: 322 – 329

Roe, B.E. and Just, D.R., (2009), Internal and External Validity in Economics Research: Tradeoffs between Experiments, Field Experiments, Natural Experiments, and Field Data, *American Journal of Agrarian Economics*, 91, Number 5: 1266 - 1271

Rogers, E.M., (1962), *Diffusion of innovation*, The Free Press of Glencoe, New York

Rogers, E.M., (1995), *Diffusion of innovation*, fourth edition, The Free Press, New York

Rokeach, M., (1968), The Role Of Values In Public Opinion Research, *Public Opinion Quarterly*, Vol. 32, Issue 4: 547 – 559

Rokeach, M., (1973), *The nature of human values*, Free Press, New York

Roos, I., (1999), Switching Processes in Customer Relationships, *Journal of Service Research*, Vol. 2, No. 1: 68 - 85

Roos, I., (2002), Methods of Investigating Critical Incidents: A Comparative Review, *Journal of Service Research*, Vol. 4, No. 3: 193 – 204

Roos, I., Edvardsson, B. and Gustafsson, A., (2004), Customer Switching Patters in Competitive and Noncompetitive Service Industries, *Journal of Service Research*, Vol. 6, No. 3: 256 - 271

Rose, J. and Sanford, C., (2007), Mapping eParticipation Research: Four Central Challenges, *Communications of the Association for Information Systems*, Vol. 20: 909 - 943

Rosenberg, M.J., (1956), Cognitive Structure And Attitudinal Affect, *Journal of Abnormal and Social Psychology*, 53: 367 – 372

Rosenthal,R. and Rosnow, R.L., (1991), *Essentials Of Behavioral Research*, second edition, Mc-Graw-Hill, New York

Rosnow, R.L. and Rosenthal, R., (2005), *Beginning Behavioral Research*, fifth edition, Pearson Prentice Hall, Upper Saddle River

Ross, S.D., Norman, W.C. and Dorsch, M.J., (2003), The use of conjoint analysis in the development of a new recreation facility, *Managing Leisure*, 8, October: 227 – 244

Rucker, D.D. and Petty, R.E., (2006), Increasing the Effectiveness of Communications to Consumers: Recommendations Based on Elaboration Likelihood and Attitude Certainty Perspectives, *Journal of Public Policy & Marketing*, Vol. 25, (1): 39 - 52

Rudman, L.A., (2008), On Babies and Bathwater: A Call for Diversification and Diagnosis, *Psychological Inquiry*, 19: 84 - 89

Rugg, G., Eva, M., Mahmood, A., Rehman, N., Andrews, S. and Davies, S., (2002), Eliciting information about organizational culture via laddering, *Information Systems Journal*, 12: 215 - 229

Russell, C.G., Flight, I., Leppard, P., Van Lawick van Pabst, J.A., Syrette, J.A. and Cox, D.N., (2004), A comparison of paper-and-pencil and computerised methods of "hard" laddering, *Food Quality and Preferences*, 15: 279 – 291

Russo, J.E. and Johnson, E.J., (1980), What Do Consumers Know About Familiar Products, *Advances in Consumer Research*, Vol. 7: 417 – 423

Russo, J.E. and Leclerc, F., (1994), An Eye-Fixation Analysis of Choice Processes for Consumer Nondurables, *Journal of Consumer Research*, Vol. 21, September: 274 – 290

Russo, J.E., Johnson, E.J. and Stephens, D.L., (1989), The validity of verbal protocols, *Memory & Cognition*, 17, (6): 759 - 769

Rust, R.T. and Zahorik, A.J., (1993), Customer Satisfaction, Customer Retention, and Market Share, *Journal of Retailing*, Vol. 69, No. 2: 193 – 215

Ryan, M.J. and Bonfield, E.H., (1975), The Extended Fishbein Model: Additional Insights.... And Problems, *Advances in Consumer Research*, Vol. 2, Issue 1: 265 – 283

Ryan, M.J. and Bonfield, E.H., (1980), Fishbein's Intentions Model: A Test Of External And Pragmatic Validity, *Journal of Marketing*, Vol. 44, Issue 2: 82 – 95

Rydell, R.J. and Gawronski, B., (2009), I like you, I like you not: Understanding the formation of context-dependent automatic attitudes, *Cognition And Emotion*, 23, (6): 1118 - 1152

S

Salam, A.F., Iyer, L., Palvia, P. and Singh, R., (2005), Trust in E-commerce, *Communications of the ACM*, Vol. 48, No. 2: 73 – 77

Salant, P. and Dillman, D.A., (1994), *How To Conduct Your Own Survey*, John Wiley & Sons, New York

Sampson, G., (2003), The Myth of Diminishing Firms, *Communications of the ACM*, Vol. 46, No. 11: 25 - 28

Sánchez,-Garcia, J., Moliner-Tena, M.A., Callarisa-Fiol, L. and Rodríguez-Artola, R.M., (2007), Relationship Quality of an Establishment and Perceived Value of a Purchase, *The Service Industries Journal*, Vol. 27, No. 2: 151 - 174

Sathye, M., (1999), Adoption of Internet banking by Australian consumers: an empirical investigation, *International Journal of Bank Marketing*, Vol. 17, Issue 7: 324 – 334

Saunders, M., Lewis, P. and Thornhill, A., (2012), *Research Methods For Business Students*, sixth edition, Pearson Education Limited, Harlow

Savage, L.J., (1954), *The Foundation of Statistics*, John Wiley & Sons, New York

Savolainen, R., (1999), The role of the internet in information seeking. Putting the networked services in context*, Information Processing and Management*, 35: 765 – 782

Schaupp, L.C., Fan, W. and Belanger, F., (2006), Determining Success for Different Website Goals, in*: Proceedings of the 39th Hawaii International Conference on System Sciences*, IEEE

Schepers, J. and Wetzels, M., (2007), A meta-analysis of the technology acceptance model: Investigating subjective norm and moderation effects, *Information & Management*, 44: 90 – 103

Schierz, P.G., Schilke, O. and Wirtz, B.W., (2010), Understanding consumer acceptance of mobile payment services: An empirical analysis, *Electronic Commerce Research and Applications*, 9: 209 - 216

Schiffman, L.G. and Kanuk, L.L., (2007), *Consumer Behavior*, Pearson Education Inc., Upper Saddle River, New Yersey

Schillewaert, N. and Meulemeester, P., (2005), Comparing response distributions of offline and online data collection methods, *International Journal of Market Research*, Vol. 47, Issue 2: 163 - 178

Schlosser, A.E, (2003a), Computers as Situational Cues: Implications for Consumers Product Cognitions and Attitude, *Journal of Consumer Psychology*, 13, (1&2): 103 – 112

Schlosser, A.E., (2003b), Experiencing Products in the Virtual World: The Role of Goal and Imagery in Influencing Attitudes versus Purchase Intentions, *Journal of Consumer Research*, Vol. 30, September: 184 - 198

Schlosser, A.E., Barnett White, T. and Lloyd, S.M., (2006), Converting Web Site Visitors into Buyers: How Web Site Investment Increases Consumer Trusting Beliefs and Online Purchase Intentions, *Journal of Marketing*, Vol. 70, April: 133 – 148

Schmenner, R.W., (1986), How can service businesses survive and prosper?, *Sloan Management Review*, 27, 3: 21 - 32

Schmidt, F.L. and Wilson, T.C., (1975), Expectancy Value Models of Attitude Measurement: A Measurement Problem, *Journal of Marketing Research*, Vol. XII, August: 366 – 368

Schoder, D. and Haenlein, M., (2004), The Relative Importance of Different Trust Constructs for Sellers in the Online World, *Electronic Markets*, Vol. 14, (1): 48 - 57

Schoenbachler, D.D. and Gordon, G.L., (2002), Multi-channel shopping: understanding what drives channel choice, *Journal of Consumer Marketing*, Vol. 19, No. 1: 42 – 53

Schoorman, F.D., Mayer, R.C. and Davis, J.H., (2007), An Integrative Model Of Organizational Trust: Past, Present, And Future, *Academy of Management Review*, Vol. 32, No. 2: 344 – 354

Schröder, H. and Zaharia, S., (2008), Linking multi-channel behavior with shopping motives: An empirical investigation of a German retailer, *Journal of Retailing and Consumers Services*, 15: 452 - 468

Schubert, P., (2002), Extended Web Assessment Method (EWAM): Evaluation of Electronic Commerce Applications from the Customer's Viewpoint, *International Journal of Electronic Commerce*, Vol. 7, No. 2: 51 – 80

Schultze, U. and Avital, M., (2011), Designing interviews to generate rich data for information systems research, *Information and Organization*, 21: 1 - 16

Schwarz, A., Jayatilaka, B., Hirschheim, R. and Goles, T., (2009), A Conjoint Approach to Understanding IT Application Services Outsourcing, *Journal of the Association for Information Systems*, Vol. 10, Issue 10: 748 - 781

Sears, D.O., (2008), College Student-itis Redux, *Psychological Inquiry*, 19: 72 - 77

Seddon, P.B., (1997), A Respecification and Extension of the DeLone and McLean Model of IS Success, *Information Systems Research*, Vol. 8, No. 3: 240 – 253

Seeman, E. and Gibson, (2009), Predicting Acceptance of Electronic Medical Records: Is the Technology Acceptance Model Enough?, *SAM Advanced Management Journal*, Autumn: 21 - 26

Semon, T.T., Cohen, R., Richmond, S.B. and Stock, J.S., (1959), Sampling In Market Research, *Journal of Marketing*, January: 263 - 273

Sen, R., King, R.C. and Shaw, M.J., (2006), Buyers' Choice of Online Search Strategy and Its Managerial Implications, *Journal of Management Information Systems*, Vol. 23, No. 1: 211 – 238

Sengupta, J. and Fitzsimons, G.J., (2000), The Effects of Analyzing Reasons for Brand Preferences: Disruption or Reinforcement?, *Journal of Marketing Research*, Vol. 37, No. 3: 318-330.

Sethuraman, R., Cole, C. and Jain, D., (1994), Analyzing the Effect of Information Format and Task on Cutoff Search Strategies, *Journal of Consumer Psychology*, Vol. 3, Issue 2: 103 – 136

Shang, R.-A., Chen, Y.-C. and Shen, L., (2005), Extrinsic versus intrinsic motivations for consumers to shop on-line, *Information & Management*, 42: 401 – 413

Shankar, V., Inman, J.J., Mantrala, M., Kelley, E. and Rizley, R., (2011), Innovations in Shopper Marketing: Current Insights and Future Research Issues, *Journal of Retailing*, Special issue on innovations in retailing, S29 – S42

Shannon, C.E., (1948), A Mathematical Theory of Communication, *The Bell System Technical Journal*, Vol. 27: 379 – 423, 623 – 656

Shannon, C.E. and Weaver, W., (1949), *The Mathematical Theory of Communication*, University of Illinois Press, Urbana

Shareef, M.A., Kumar, V., Kumar, U. and Dwivedi, Y.K., (2011), e-Government Adoption Model (GAM): Differing service maturity levels, *Government Information Quarterly*, 28: 17 - 35

Sharma, A. and Krishan, R., (2002), Clicks Only, Clicks and Bricks, and Bricks Only: Are Retail Salespeople an Important Factor in Choice, *Journal of Marketing Management*, 18: 317 – 336

Sheppard, B.H., Hartwick, J. and Warshaw, P.R., (1988), The Theory of Reasoned Action: A Meta-Analysis of Past Research with Recommendations for Modifications and Future Research, *Journal of Consumer Research*, Vol. 15, December: 325 – 343

Sheth, J.N., (1972), Reply to Comments on the Nature and Uses of Expectancy Value Models in Consumer Attitude Research, *Journal of Marketing Research*, Vol. IX, November: 462 - 465

Sheth, J.N. and Talarzyk, W.W., (1972), Perceived Instrumentality and Value Importance as Determinants of Attitudes, *Journal of Marketing Research*, Vol. IX, February: 6 – 9

Sheth, J.N., Gardner, D.M. and Garrett, D.E., (1988). *Marketing Theory: Evolution And Evaluation*, John Wiley & Sons, New York

Shih, H.-P., (2004), An empirical study of predicting user acceptance of e-shopping on the Web, *Information & Management*, 41: 351 – 368

Shim, J.P., Shin, Y.B. and Nottingham, L, (2002), Retailer Web Site Influence on Customer Shopping: An Exploratory Study on Key Factors of Customer Satisfaction, *Journal of the Association for Information Systems*, Vol. 3: 53 - 76

REFERENCES

Shim, S., Eastlick, M.A., Lotz, S.L. and Warrington, P., (2001), An online prepurchase intentions model: The role of intention to search, *Journal of Retailing*, 77: 397 – 416

Shin, D.H., (2009), Understanding User Acceptance of DMB in South Korea Using the Modified Technology Acceptance Model, *International Journal of Human-Computer Interaction,* Vol. 25 Issue 3: 173 - 198

Shin, N., (2001), Strategies for competitive advantage in electronic commerce, *Journal of Electronic Commerce Research*, Vol. 2, No. 4: 164 – 171

Shugan, S.M., (1980), The Cost of Thinking, *Journal of Consumer Research*, Vol. 7, September: 99 – 111

Shuptrine, F.K., (1975), On the Validity of Using Students as Subjects in Consumer Behavior Investigations, *Journal of Business*, Vol. 48, Issue 3: 383 - 390

Sidorova, A., Evangelopoulos, N., Valacich, J.S. and Ramakrishnan, T., (2008), Uncovering the Intellectual Core of the Information Systems Discipline, *MIS Quarterly*, Vol. 32, No. 3: 467 - 482

Silva, L., (2007), Post-positivist Review of Technology Acceptance Model, *Journal of the Association for Information Systems*, Vol. 8, Issue 8: 255 – 266

Simmons, C.J., Bickart, B.A. and Lynch, J.G., (1993), Capturing and Creating Public Opinion in Survey Research, *Journal of Consumer Research*, Vol. 20, September: 316 - 329

Simmons, J.P., Nelson, L.D. and Simonsohn, U., (2011), False-Positive Psychology: Undisclosed Flexibility in Data Collection and Analysis Allows Presenting Anything as Significant, *Psychological Science*, Vol. 22, No. 11: 1359 – 1366

Simmons, R., (2001), Questionnaires, in: Gilbert, N. (ed.), *Researching Social Life*, Sage, London

Simon, H.A., (1955), A Behavioral Model Of Rational Choice, *Quarterly Journal of Economics*, 69 (February): 99 – 118

Simon, H.A., (1956), Rational Choice and the Structure of the Environment, *Psychological Review*, volume 63, March: 129 – 138

Simon, H.A., (1957), *Models of Man*, John Wiley & Sons, New York

Simon, H.A., (1979), Rational Decision Making in Business Organizations, *The American Economic Review*, Vol. 69, No. 4 (September): 493 – 513

Simon, H.A., (1986), Rationality in Psychology and Economics, *Journal of Business*, Vol. 59, No. 4, Pt. 2: 209 - 224

Simon, H.A. (chairman), (1987), Decision Making and Problem Solving, *Interfaces*, 17: 5 : September – October: 11 - 31

Simon, S.J., (2001), The Impact of Culture and Gender on Web Sites: An Empirical Study, *The Data Base for Advances in Information Systems*, Vol. 32, No. 1: 18 – 37

Simon, S.J. and Peppas, S.C., (2005), Attitudes Towards Product Website Design: A Study of the Effects of Gender, *Journal of Marketing Communications*, Vol. 11, No. 2: 129 - 144

Simons, L.P.A., (2006), *Multi-channel services for click and mortars*, Ph.D thesis, Delft University of Technology, Delft

Simons, L.P.A., Steinfeld, C. and Bouwman, H., (2002), Strategic positioning of the Web in a multi-channel market approach, *Internet Research: Electronic Networking Applications and Policy*, Vol. 12, No. 4: 339 – 347

Simonson, I., (1989), Choice Based on Reasons: The Case of Attraction and Compromise Effects: *Journal of Consumer Research*, Vol. 16, September: 158 - 174

Simonson, I. and Tversky, A., (1992), Choice in Context: Tradeoff Contrast and Extremeness Aversion, *Journal of Marketing Research*, Vol. XXIX, August: 281 – 295

Simonson, I., Carmon, Z, Dhar, R., Drolet A. and Nowlis, S.M., (2001), Consumer Research: In Search of Identity, *Annual Review of Psychology*, Vol. 52: 249 - 275

Singh, J., Howell, R.D. and Rhoads, G.K., (1990), Adaptive Designs for Likert-Type Data: An Approach for Implementing Marketing Surveys, *Journal of Marketing Research*, Vol. XXVII, August: 304 - 321

Sirakaya, E. and Woodside, A.G., (2005), Building and testing theories of decision making by travellers, *Tourism Management*, 26: 815 - 832

Sismeiro, C. and Bucklin, R.E., (2004), Modeling Purchase Behavior at an E-Commerce Web Site: A Task-Completion Approach, *Journal of Marketing Research*, Vol. XLI, August: 306 – 323

Slack, F., Rowley, J. and Coles, S., (2008), Consumer behaviour in multi-channel contexts: the case of a theatre festival, *Internet Research*, Vol. 18, No. 1: 46 – 59

Slevin, J., (2000), *The Internet and Society*, Polity Press, Cambridge

Slovic, P., Fischhoff, B. and Lichtenstein, S., (1977), Behavioral Decision Theory, *Annual Review of Psychology*, 28: 1 - 39

Smith, J.R., Terry, D.J., Manstead, A.S.R., Louis, W.R. Kotterman, D. and Wolfs, J., (2008), The Attitude-Behavior Relationship in Consumer Conduct: The Role of Norms, Past Behavior, and Self-Identity, *The Journal of Social Psychology*, 148, (3): 311 - 333

Snelders, D. and Schoormans, J.P.L., (2004), An exploratory study of the relation between concrete and abstract product attributes, *Journal of Economic Psychology*, 25: 803 – 820

Sommer, B. and Sommer, R., (1997), *A Practical Guide to Behavioral Research*, fourth edition, Oxford University Press, New York

Son, J.-Y., Kim, S.S. and Riggins, F.J., (2006), Consumer Adoption of Net-Enabled Infomediaries: Theoretical Explanations and an Empirical Test, *Journal of the Association for Information Systems*, Vol. 7, No. 7: 473 – 508

Song, I., Larose, R., Eastin, M.S. and Lin, C.A., (2004), Internet Gratifications and Internet Addiction: On the Uses and Abuses of New Media, *CyberPsychology & Behavior*, Vol. 7, Number 4: 384 – 394

Song, J. and Zahedi, F., (2005), A Theoretical Approach to Web Design in E-Commerce: A Belief Reinforcement Model, *Management Science*, Vol. 51, No. 8: 1219 - 1235

Song, M., Parry, M.E. and Kawakami, T., (2009), Incorporating Network Externalities into the Technology Acceptance Model, *Journal of Product Innovation Management*, 26: 291 - 307

Soopramanien, D.G.R., Fildes, R. and Robertson, A., (2007), Consumer decision making, E-commerce and perceived risks, *Applied Economics*, 39: 2159 - 2166

Soopramanien, D.G.R. and Robertson, A., (2007), Adoption and usage of online shopping: An empirical analysis of the characteristics of "buyers" "browsers" and "non-internet shoppers", *Journal of Retailing and Consumer Services*, 14: 73 – 82

Sørensen, E.B. and Askegaard, S., (2007), Laddering: how (not) to do things with words, *Qualitative Market Research: An International Journal*, Vol. 10, No. 1: 63 – 77

Sørebø, Ø. and Eikebrokk, T.R., (2008), Explaining IS continuance in environments where usage is mandatory, *Computers in Human Behavior*, 24: 2357 - 2371

Sommer, B. and Sommer, R., (1997), *A Practical Guide to Behavioral Research*, fourth edition, Oxford University Press, New York

Sousa, R. and Voss, C.A., (2006), Service Quality in Multichannel Services Employing Virtual Channels, *Journal of Service Research*, Vol. 8, No. 4: 356 - 371

Sparrow, N., (2006), Developing reliable opinion polls, *International Journal of Market Research*, Vol. 48, Issue 6: 659 - 680

Sparrow, N. and Curtice, J., (2004), Measuring attitudes of the general public via internet polls: an evaluation, *International Journal of Market Research*, Vol. 46, Quarter 1: 23 – 44

Speier, C. and Venkatesh, V., (2002), The Hidden Minefields in the Adoption of Sales Force Automation Technologies, *Journal of Marketing*, Vol. 66, July: 98 – 111

Spiggle, S. and Sewall, M.A., (1987), A Choice Sets Model of Retail Selection, *Journal of Marketing*, Vol. 51, April: 97 – 111

Spreng, R.A., MacKenzie, S.B. and Olshavsky, R.W., (1996), A Reexamination of the Determinants of Consumer Satisfaction, *Journal of Marketing*, Vol. 60, July: 15 - 32

Srinivasan, N. and Ratchford, B.T., (1991), An Empirical Test of a Model of External Search for Automobiles, *Journal of Consumer Research*, Vol. 18, September: 233 - 242

Srinivasan, V., (1979), Network Models For Estimating Brand-Specific Effects In Multi-Attribute Marketing Models, *Management Science*, Vol. 25, No. 1: 11 - 21

Srinivasan, V. and deMaCarty, P., (1999), Predictive Validation of Multiattribute Choice Modes, *Marketing Research*, Winter/Spring: 29 - 34

Stafford, T.F. and Conier, D., (2007), The Online Research "Bubble", *Communication of the ACM*, Vol. 50, No. 9: 109 - 112

Stafford, T.F., Stafford, M.R. and Schkade, L.L., (2004), Determining Uses and Gratifications for the Internet, *Decision Sciences*, Vol. 35, Number 2: 259 - 288

Steenkamp, J.E.M. and Geyskens, I., (2006), How Country Characteristics Affect the Perceived Value of Web Sites, *Journal of Marketing*, Vol. 70, July: 136 – 150

Steenkamp, J.E.M., De Jong, M.G. and Baumgartner, H., (2010), Socially Desirable Response Tendencies in Survey Research, *Journal of Marketing Research*, Vol. XLVII, April: 199 - 214

Steinfeld, C. Bouwman, H. and Adelaar, T., (2002a), The Dynamics of Click-and-Mortar Electronic Commerce: Opportunities and Management Strategies, *International Journal of Electronic Commerce*, Vol. 7, No. 1: 93 – 119

Steinfeld, C. Adelaar, T. and Lai, Y., (2002b), Integrating Brick and Mortar Locations with E-Commerce: Understanding Synergy Opportunities, in: *Proceedings of the 35th Hawaii International Conference on System Sciences*, IEEE

Steinmann, S. and Silberer, G., (2009), Functions And Importance Of Customer Contacts In The Purchase Process, *8th International Congress Marketing Trends*

Stevens, S.S., (1946), On the Theory of Scales of Measurement, *Science*, Vol. 103, No. 2684: 677 – 680

Stewart, K.J., (2003), Trust Transfer on the World Wide Web, *Organizational Science*, Vol. 14, No. 1: 5 - 17

Stigler, G.J., (1961), The Economics of Information, *Journal of Political Economy*, Vol. 69, No. 3: 213 - 225

Stiglitz, J.E., (1987), Technological Change, Sunk Costs, and Competition, *Brookings Papers on Economic Activity*, 3: 883 – 947

Stone, M., Hobbs, M. and Khaleeli, M., (2002), Multichannel customer management: The benefits and challenges, *Journal of Database Marketing*, Vol. 10, 1: 39 - 52

Strebel, J., Erdem, T. and Swait, J., (2004), Consumer Search in High Technology Markets: Exploring the Use of Traditional Information Channels, *Journal of Consumer Psychology*, 14 (1&2): 96 – 104

Straub, D.W. and Burton-Jones, A., (2007), Veni, Vidi, Vici: Breaking the TAM Logjam, *Journal of the Association for Information Systems*, Vol. 8, Issue 4: 223 – 229

Straub, D., Boudreau, M.-C. and Gefen, D., (2004), Validation Guidelines For IS Positivist Research, *Communications of the Association for Information Systems*, Vol. 13: 380 – 427

Suddaby, R., (2006), From The Editors: What Grounded Theory Is Not, *Academy of Management Journal,* Vol. 49, No. 4: 633 - 642

Sudman, S. and Blair, E., (1999), Sampling in the Twenty-First Century, *Journal of the Academy of Marketing Science*, Vol. 27, No. 2: 269 - 277

Sun, H. and Zhang, P., (2004), A Methodological Analysis of User Technology Acceptance, in: *Proceedings of the 37th Hawaii International Conference on System Sciences*, IEEE

Sun, P.-C. and Cheng, H.K., (2007), The design of instructional multimedia in e-Learning: A Media Richness Theory-based approach, *Computers & Education*, 49: 662 – 676

Sundarraj, R.P. and Wu, J., (2005), Using information-systems constructs to study online- and telephone-banking technologies, *Electronic Commerce Research and Applications*, 4: 427 – 443

Sundén, J., (2009), Response to Lori Kendall, in: Markham, A.N. and Baym, N.K. (eds.), *Internet Inquiry*, Sage, Thousand Oaks

Svenson, O., (2006), Pre- and Post-Decision Construction of Preferences: Differentiation and Consolidation, in: Lichtenstein, S. and Slovic, P. (eds.), *The Construction of Preference*, Cambridge University Press, New York

Svensson, E., (2001), Guidelines To Statistical Evaluation Of Data From Rating Scales And Questionnaires, *Journal of Rehabilitation Medicine*, 33: 47 – 48,

Swaminathan, V., (2003), The Impact of Recommendation Agents on Consumer Evaluation and Choice: The Moderating Role of Category Risk, Product Complexity, and Consumer Knowledge, *Journal of Consumer Psychology*, 13, 1&2: 93 – 101

Swan, J.E. and Trawick, I.F., (1981), Disconfirmation of Expectations and Satisfaction with a Retail Service, *Journal of Retailing*, Vol. 57, No. 3: 49 – 67

Swanborn, P.G., (1977), *Aspecten van sociologisch onderzoek*, vijfde druk, Boom, Meppel

Swoboda, B.S., (1998), Conditions of consumer information seeking: theoretical foundations and empirical results of using interactive multimedia systems, *The International Review of Retail, Distribution and Consumer Research*, 8, 4: 361 - 381

Sykes, T.A., Venkatesh, V. and Gosain, S., (2009), Model of Acceptance with Peer Support: A Social Network Perspective to Understand Employees' System Use, *MIS Quarterly*, Vol. 33, No. 2: 371 – 393

Szajna, B., (1996), Empirical Evaluation of the Revised Technology Acceptance Model, *Management Science*, Vol. 42, No. 1: 85 – 92

Szajna, B. and Scamell, R.W., (1993), The Effects of Information System User Expectations on Their Performance and Perceptions, *MIS Quarterly*, December: 493 - 516

T

Talarzyk, W.W., (1972), A Reply to the Response to Bass, Talarzyk, and Sheth, *Journal of Marketing Research*, Vol. IX, November: 465 – 467

Tallman, I. and Gray, L.N., (1990), Choices, Decisions, And Problem-Solving, *Annual Review of Sociology*, 16: 405 - 433

Tan, M. and Teo, T.S.H., (2000), Factors Influencing the Adoption of Internet Banking, *Journal of the Association for Information Systems*, Vol. 1, Article 5, July: 1 – 42

Tate, M. and Evermann, J., (2010), The End of ServQual in Online Services Research: Where to from here?, *eService Journal*, Volume 7, Issue 1: 60 – 85

Taylor, D. and Strutton, D., (2010), Has e-marketing come of age? Modeling historical influences on post-adoption era Internet consumer behaviors, *Journal of Business Research*, 63: 950 - 956

Taylor, H., (2000), Does internet research work?, *International Journal of Market Research*, Vol. 42, Issue 1: 51 – 63

Taylor, H., Dillon, S. and Van Wingen, M., (2010), Focus and Diversity in Information Systems Research: Meeting the Dual Demands of a Healthy Applied Discipline, *MIS Quarterly*, Vol. 34, No. 4: 647 - 667

Taylor, S. and Todd, P.A., (1995a), Understanding Information Technology Usage: A Test of Competing Models, *Information Systems Research*, 6:2: 144 – 176

Taylor, S. and Todd, P., (1995b), Assessing IT Usage: The Role of Prior Experience, *MIS Quarterly*, December: 561 - 570

Teerling, M.L. and Pieterson, W., (2011), How to improve e-government use: An empirical examination of multichannel marketing instruments, *Information Polity*, 16: 171 - 187

Teo, T.S.H., Tan, M. and Peck, S.N., (2004), Adopters and non-adopters of internet stock trading in Singapore, *Behaviour & Information Technology*, Vol. 23, No. 3: 211 – 233

Ter Hofstede, F., Audenaert, A., J.E.M. Steenkamp and Wedel, M., (1998), An investigation into the association pattern technique as a quantitative approach to measuring means-end chains, *International Journal of Research in Marketing*, 15: 37 – 50

Terstegen, A.J.C., (2009*), Klantgedrag in distributie van diensten langs meerdere kanalen*, Master thesis, Universiteit van Amsterdam

Thaler, R.H., (1985), Mental Accounting And Consumer Choice, *Marketing Science*, Vol. 4, No. 3: 199 - 214

Thaler, R.H., (2000), From Homo Economicus to Homo Sapiens, *Journal of Economic Perspectives*, Vol. 14, No. 1: 133 - 141

Thaler, R.H and Johnson, E.J., (1990), Gambling With The House Money And Trying To Break Even: The Effects Of Prior Outcomes On Risky Choice, *Management Science*, Vol. 36, No. 6: 643 - 660

Thatcher, J.B. and George, J.F., (2004), Commitment, Trust, and Social Involvement: An Exploratory Study of Antecedents to Web Shopper Loyalty, *Journal of Organizational Computing and Electronic Commerce*, 14, 4: 243 – 268

Theetranont, C., Haddawy, P. and Krairit, D., (2007), Integrating Visualization And Multi-Attribute Utility Theory For Online Product Selection, *International Journal of Information Technology & Decision Making*, Vol. 6, No. 4: 723 - 750

Thompson, E.S. and Laing, A.W., (2003), "The Net Generation": Children and Young People, the Internet and Online Shopping, *Journal of Marketing Management*, 19: 491 - 512

Thompson, R.L., Higgins, C.A. and Howell, J.M., (1991), Personal Computing: Toward a Conceptual Model of Utilization, *MIS Quarterly*, March: 125 – 143

Thompson, R.L., Higgins, C.A. and Howell, J.M., (1994), Influence of Experience on Personal Computer Utilization: Testing a Conceptual Model, *Journal of Management Information Systems*, Vol. 11, No. 1: 167 – 187

Thong, J.Y.L, Hong, S.-J. and Tam, K.Y., (2006), The effects of post-adoption beliefs on the expectation-confirmation model for information technology continuance, *International Journal of Human-Computer Studies*, 64: 799 - 810

Torkzadeh, G., Chang, J.C. and Demirhan, D., (2006), A contingency model of computer and Internet self-efficacy, *Information & Management*, 43: 541 – 550

Torkazadeh, G. and Dhillon, G., (2002), Measuring Factors that Influence the Success of Internet Commerce, *Information Systems Research*, Vol. 13, No. 2: 187 - 204

Tormala, Z.L. and Petty, R.E., (2004), Source Credibility and Attitude Certainty: A Metacognitive Analysis of Resistance to Persuasion, *Journal of Consumer Psychology*, 14, (4): 427 - 442

Torres, L., Pina, V. and Acerete, B., (2006), E-Governance Developments in European Union Cities: Reshaping Government's Relationship with Citizens, *Governance: An International Journal of Policy, Administration, and Institutions*, Vol. 19, No. 2: 277 – 302

Townsend, J.T. and Ashby, F.G., (1984), Measurement Scales and Statistics: The Misconception Misconceived, *Psychological Bulletin*, Vol. 96, No. 2: 394 - 401

Treacy, M. and Wiersema, F., (1993), Customer Intimacy and Other Value Disciplines, *Harvard Business Review*, January-February: 84-93

Treacy, M. and Wiersema, F., (1995), *The Discipline of Market Leaders: choose your customers, narrow your focus, dominate your market*, Basic Books, New York

Triandis, H.C., (2004), The many dimensions of culture, *Academy of Management Executive*, Vol. 18, No. 1: 88 – 93

Troye, S.V., (1994), Evoked Set Formation As A Categorization Process, *Advances in Consumer Research*, Vol. 11, Issue 1: 180 – 186

Tsao, H. and Lin, K.H., (2001), A Two-Level Approach to Establishing a Marketing Strategy in the Electronic Marketplace, in: *Proceedings of the 34th Hawaii International Conference on System Sciences*, IEEE

Tseng, F.-M. and Lo, H.-Y., (2011), Antecedents of consumers' intentions to upgrade their mobile phones, *Telecommunication Policy*, Vol. 35, Issue 1: 74 - 86

Tsikriktsis, N., (2002), Does Culture Influence Web Site Quality Expectations?: An Empirical Study, *Journal of Service Research*, Vol. 5, No. 2: 101 - 112

Tsikriktsis, N., (2004), A Technology Readiness-Based Taxonomy of Customers: A Replication and Extension, *Journal of Service Research*, Vol. 7, No. 1, August: 42 – 52

Tuck, M., (1973), Fishbein Theory and the Bass-Talarzk Problem, *Journal of Marketing Research*, Vol. X, August: 345 - 348

Turley, L.W. and LeBlanc, R.P., (1993), An Exploratory Investigation of Consumer Decision Making in the Service Sector, *Journal of Services Marketing*, Vol. 7, No. 4: 11 – 18

Turley, L.W. and LeBlanc, R.P., (1995), Evoked Sets: A Dynamic Process Model, *Journal of Marketing Theory and Practice*, Spring: 28 – 36

Turner, M., Kitchenham, B., Brereton, P., Charters, S. and Budgen, D., (2010), Does the technology acceptance model predict actual use? A systematic literature review, *Information and Software Technology*, 52: 463 - 479

Tversky, A. and Kahneman, D., (1991), Loss Aversion In Riskless Choice: A Reference-Dependent Model, *The Quarterly Journal of Economics*, November: 1039 – 1061

Tversky, A. and Simonson, I., (1993), Context-dependent Preferences, *Management Science*, Vol. 39, No. 10: 1179 - 1189

Tyagi, R.K., (2004), Technological Advances, Transaction Costs, and Consumer Welfare, *Marketing Science*, Vol. 23, No. 3: 335 – 344

Tybout, A.M, and Artz, N., (1994), Consumer Psychology, *Annual Review of Psychology*, 45: 131 – 169

Tybout, A.M. and Calder, B.J., (1977), Threats To Internal And External Validity In The Field Setting, *Advances in Consumer Research*, Vol. 4, Issue 1: 5 – 10

Tzou, R.-C. and Lu, H.-P., (2009), Exploring the emotional, aesthetic, and ergonomic facets of innovative product on fashion technology acceptance model, *Behaviour & Information Technology,* Vol. 28, Issue 4: 311 - 322

U

Ueltschy, L.C., Krampf, R.F. and Yannopoulos, P., (2004), A Cross-National Study Of Perceived Consumer Risk Towards Online (Internet) Purchasing, *The Multinational Business Review*, Vol. 12. No. 2: 59 - 82

Urbany, J.E., (1986), An Experimental Examination of the Economics of Information, *Journal of Consumer Research*, Vol. 13, September: 257 – 271

Urbany, J.E. and Talarzyk, (1983), Videotex: Implications for Retailing, *Journal of Retailing*, Vol. 59, No. 3: 76 - 92

V

Valentini, S., Montaguti, E. and Neslin, S.A., (2011), Decision Process Evolution in Customer Channel Choice, *Journal of Marketing*, Vol. 75, November: 72 - 86

Valos, M.J., (2008), A qualitative study of multi-channel marketing performance measurement issues, *Database Marketing & Customer Strategy Management*, Vol. 15, 4: 239 - 248

Van Baal, S and Dach, C., Free riding and customer retention across retailers' channels, *Journal of Interactive Marketing*, Vol. 19, no. 2: 75 – 85

Van Birgelen, M., De Jong, A. and De Ruyter, K., (2006), Multi-channel service retailing: The effects of channel performance satisfaction on behavioral intentions, *Journal of Retailing*, 82, 4: 367 – 377

Van den Haak, M., De Jong, M.D.T. and Schellens, P.J., (2003), Retrospective vs. concurrent think-aloud protocols: testing the usability of an online library catalogue, *Behaviour & Information Technology*, Vol. 22, No. 5: 339 – 351

Van der Aa, W. and Elfring, T., (2002), Realizing innovation in services, *Scandinavian Journal of Management*, 18: 155 - 171

Van der Heijden, H., (2004), User Acceptance of Hedonic Information Systems, *MIS Quarterly*, Vol. 28, No. 4: 695 – 704

Van Deursen, A., Van Dijk, J. and Ebbers, W., (2006), Why E-government Usage Lags Behind: Explaining the Gap between Potential and Actual Usage of Electronic Public Services in the Netherlands, in: M.A. Wimmer et al., (eds.): *EGOV*, LNCS 4084, Springer Verlag Berlin

Van Deursen, A.J.A.M., Van Dijk, J.A.G.M. and Boland, D., (2007), *Elektronische publieke dienstverlening in de toekomst*, Universiteit Enschede, Enschede

Van de Weerd, E., (2004), *Winkelen op Internet: Factoren die E-consumentengedrag kunnen beïnvloeden*, Master thesis, Universiteit van Amsterdam

Van de Wijngaert, L., Pieterson, W. and Teerling, M.L., (2011), Influencing citizen behavior: Experiences from multichannel marketing pilot projects, *International Journal of Information Management*, Vol. 31, Issue 5: 415 - 419

Van Dijk, G., Minocha, S. and Laing, A., (2007), Consumers, channels and communication: Online and offline communication in service consumption, *Interacting with Computers*, 19: 7 – 19

Van Dolen, W.M., Dabholkar, P.A. and De Ruyter, K. (2007), Satisfaction with Online Commercial Group Chat: The Influence of Perceived Technology Attributes, Chat Group Characteristics, and Advisor Communication Style, *Journal of Retailing*, 83, 3: 339 - 358

Van Lange, P.A.M., Schippers, M. and Balliet, D., (2011), Who volunteers in psychology experiments? An empirical review of prosocial motivation in volunteering, *Personality and Individual Differences*, Vol. 51, Issue 3: 279 – 284

Van Maanen, J., Sørensen, J.B. and Mitchell, T.R., (2007), The Interplay Between Theory And Method, *Academy of Management Review*, Vol. 32, No. 4: 1145 - 1154

Van Nierop, E., Bronnenberg, B., Paap, R., Wedel, M. and Franses, P.H., (2010), Retrieving Unobserved Consideration Sets from Household Panel Data, *Journal of Marketing Research*, Vol. XLVII, February: 63 - 74

Van Nierop, J.E.M., Leeflang, P.S.H., Teerling, M.L. and Huizingh, K.R.E., (2011), The impact of the introduction and use of an informational website on offline customer buying behavior, *International Journal of Research in Marketing*, 28: 155 - 165

Van Rekom, J. and Wierenga, B., (2007), On the hierarchical nature of means-end relationships in laddering data, *Journal of Business Research*, 60: 401 – 410

Van Riel, A.C.R., Semeijn, J. and Pauwels, P., (2004), Online Travel Service Quality: The Role of Pre-Transaction Services, *Total Quality Management*, Vol. 15, No. 4: 475 - 493

Van Slyke, C. Comunale, C.L. and Belanger, F., (2002), Gender Differences in Perceptions of Web-Based Shopping, *Communications of the ACM*, Vol. 45, No. 7: 82 – 86

Van Someren, M.W., Barnard, Y.F. and Sandberg, J.A.C., (1994), *The Think Aloud Method. A practical guide to modelling cognitive processes*, Academic Press, London

Van Tuijl, M. and Ribbers, P., (2002), Electronic commerce en het verdwijnen van de intermediair: feit of fictie?, *Maandschrift Economie*, Jaargang 66: 101 - 120

Váques, R., Alvarez, L.I. and Díaz, A.M., (2005), Trust as a Key Factor in Successful Relationships between Consumer and Retail Service Providers, *The Service Industries Journal*, Vol. 25, No. 1: 83 – 101

Vargo, S.L. and Lusch, R.F., (2006), Service-Dominant Logic: What It Is, What It Is Not, What It Might Be, in: Lusch, R.L. and Vargo, S.L. (eds.), *The Service-Dominant Logic Of Marketing*, M.E. Sharpe Inc., New York

Vargo, S.L. and Lusch, R.F., (2008), Service-dominant logic: continuing the evolution, *Journal of the Academy of Marketing Science*, 36: 1 - 10

Vargo, S.L., Lusch, R.F. and Morgan, F.W., (2006), Historical Perspectives on Service-Dominant Logic, in: Lusch, R.L. and Vargo, S.L. (eds.), *The Service-Dominant Logic Of Marketing*, M.E. Sharpe Inc., New York

Vaughan, L, (2001), *Statistical Methods for the Information Professional*, Information Today, Medford New Jersey

Veldhuizen, M., (2010), *Kanaalkeuze van burgers binnen een multichannel omgeving: Een exploratief onderzoek naar de factoren die van invloed zijn op deze keuze*, Master Thesis, Universiteit van Amsterdam

Velleman, P.F. and Wilkinson, L., (1993), Nominal, Ordinal, Interval, and Ration Typologies Are Misleading, *The American Statistician*, Vol. 47, No. 1: 65 - 72

Veludo-de-Oliveira, T.M., Ikeda, A.A. and Cortez Campomar, M., (2006), Laddering in the practice of marketing research: barriers and solutions, *Qualitative Market Research: An International Journal*, Vol. 9, No. 3: 297 – 306

Venkatesan, R., Kumar, V. and Ravishanker, N., (2007), Multichannel Shopping: Causes and Consequences, *Journal of Marketing*, Vol. 71, April: 114 - 132

Venkatesh, V., (2000), Determinants of Perceived Ease of Use: Integrating Control, Intrinsic Motivation, and Emotion into the Technology Acceptance Model, *Information Systems Research*, Vol. 11, No. 4: 342 – 365

Venkatesh, V., (2006), Where To Go From Here? Thoughts on Future Directions for Research on Individual-Level Technology Adoption with a Focus on Decision Making, *Decision Sciences*, Vol. 37, Number 4: 497 – 518

Venkatesh, V. and Bala, H., (2008), Technology Acceptance Model 3 and a Research Agenda for Interventions, *Decision Sciences*, Vol. 39, Number 2: 273 - 315

Venkatesh, V. and Brown, S.A., (2001), A Longitudinal Investigation of Personal Computers in Homes: Adoption Determinants and Emerging Challenges, *MIS Quarterly*, Vol. 25, No. 1: 71 - 102

Venkatesh, V. and Davis, F.D., (2000), A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies, *Management Science*, Vol. 46, No. 2: 186 – 204

Venkatesh, V. and Goyal, S., (2010), Expectation Disconfirmation and Technology Adoption: Polynomial Modeling and Response Surface Analysis, *MIS Quarterly*, Vol. 34, No. 2: 281 - 303

Venkatesh, V. and Morris, M.G., (2000), Why Don't Men Ever Stop To Ask For Directions? Gender, Social Influence, and Their Role in Technology Acceptance and Usage Behavior, *MIS Quarterly*, Vol. 24, No. 1: 115 – 139

Venkatesh, V. and Ramesh, R., (2006), Web and Wireless Site Usability: Understanding Differences and Modeling Use, *MIS Quarterly*, Vol. 30, No. 1: 181 - 206

Venkatesh, V., Brown, S.A., Maruping, L.M. and Bala, H., (2008), Predicting Different Conceptualizations of System Use: The Competing Roles of Behavioral Intention, Facilitating Conditions, and Behavioral Expectation, *MIS Quarterly*, Vol. 32, No. 3: 483 - 502

Venkatesh, V., Davis, F.D. and Morris, M.G., (2007), Dead Or Alive? The Development, Trajectory And Future Of Technology Adoption Research, *Journal of the Association for Information Systems*, Vol. 8, Issue 4: 267 - 286

Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D., (2003), User Acceptance Of Technology: Toward A Unified View, *MIS Quarterly*, Vol. 27, No. 3: 425 - 478

Verhage, B., (2001), *Grondslagen van de marketing*, Stenfert Kroese, Groningen

Verhage, B., (2010), *Marketing Fundamentals*, Noordhof Uitgevers, Groningen

Verhagen, T., (2003), *Towards understanding online purchase behavior*, Ph.D thesis, Tinbergen Institute Research Series no. 314, Amsterdam

Verhoef, P.C., (2003), Understanding the Effect of Customer Relationship Management Efforts on Customer Retention and Customer Share Development, *Journal of Marketing*, Vol. 67, October: 30 - 45

Verhoef, P.C., Neslin, S.A. and Vroomen, B., (2007), Multi-Channel Customer Management: Understanding the Research-Shopper Phenomenon, *International Journal of Research in Marketing*, Vol. 24, No. 2: 129 – 148

Verschuren, P. and Doodewaard, (2000), *Het ontwerpen van een onderzoek*, derde editie, Lemma, Utrecht

Vijayasarathy, L.R., (2004), Predicting consumer intentions to use on-line shopping: the case for an augmented technology acceptance model, *Information & Management*, 41: 747 – 762

Vishwanath, V. and Mulvin, G., (2001), Multi-Channels: The Real Winners in the B2C Internet Wars, *Business Strategy Review*, Vol. 12, Issue 1: 25 - 33

Vinson, D.E., Scott, J.E. and Lamont, L.M., (1977), The Role of Personal Values in Marketing and Consumer Behavior, *Journal of Marketing*, Vol. 41, April: 44 – 50

Vliegen, M. and Van Leeuwen, N., (2006a), *Regionale verscheidenheid in bevolkingsconcentraties*, Bevolkingstrends, 1e kwartaal, CBS

Vliegen, M. and Van Leeuwen, N., (2006b), *Ruimtelijke verspreiding van bevolkingskernen in Nederland*, Bevolkingstrends, 1e kwartaal, CBS

Von Neumann, J. and Morgenstern, O., (1947/2007), *Theory of Games and Economic Behavior*, second edition, Princeton University Press, Princeton, New Jersey

Von Winterfeldt, D. and Edwards, W., (1986), *Decision Analysis And Behavioral Research*, Cambridge University Press, Cambridge

Voss, R., Gruber, t. and Szmigin, I., (2007), Service quality in higher education: The role of student expectations, *Journal of Business Research*, 60: 949 – 959

Vriens, M., (1994), Solving Marketing Problems With Conjoint Analysis, *Journal of Marketing Management*, 10: 37 – 55

Vriens, M. and Ter Hofstede, F., (2000), Linking Attributes, Benefits, and Consumer Values, *Marketing Research*, Fall: 5 - 10

Vroomen, B., Donkers, B., Verhoef, P.C. and Franses, P.H., (2005), Selecting Profitable Customers for Complex Services on the Internet, *Journal of Service Research*, Vol. 8, No. 1: 37 - 47

W

Wagner, T., (2007), Shopping motivation revised: a means-end chain analytical perspective, *International Journal of Retail & Distribution Management*, Vol. 35, No. 7: 569 - 582

Walker, J. and Baker, J., (2000), An exploratory study of a multi-expectation framework for services, *Journal of Services Marketing*, Vol. 14, No. 5: 411 - 431

Walker, R.H. and Johnson, L.W., (2005), Towards understanding attitudes of consumers who use internet banking services, *Journal of Financial Services Marketing*, Vol. 10, No. 1: 84 – 94

Wang, Y.-S., (2008), Assessing e-commerce systems success: a respecification and validation of the DeLone and McLean model of IS success, *Information Systems Journal*, 18: 529 - 557

Wang, C.-C., Lo, S.-K. and Fang, W., (2008), Extending the technology acceptance model to mobile telecommunication innovation: The existence of network externalities, *Journal of Consumer Behaviour*, 7: 101 - 110

Wang, F. and Head, M., (2007), How can the Web help build customer relationships? An empirical study on e-tailing, *Information & Management*, Vol. 44, Issue 2: 115 - 129

Wang, S. and Cheung, W., (2004), E-Business Adoption by Travel Agencies: Prime Candidates for Mobile e-Business*, International Journal of Electronic Commerce*, Vol. 8, No. 3: 43 – 63

Wang, W. and Benbasat, I., (2005), Trust in and Adoption of Online Recommendation Agents, *Journal of the Association for Information Systems*, Vol. 6, No. 3: 72 – 101

Wang, W. and Benbasat, I., (2007), Recommendation Agents for Electronic Commerce: Effects of Explanation Facilities on Trusting Beliefs, *Journal of Management Information Systems*, Vol. 23, No. 4: 217 - 246

Wang, W. and Benbasat, I., (2008), Attributions of Trust in Decision Support Technologies: A Study of Recommendation Agents for E-Commerce, *Journal of Management Information Systems*, Vol. 24, No. 4: 249 – 273

Wang, W. and Benbasat, I., (2009), Interactive Decision Aids for Consumer Decision Making in E-Commerce: The Influence of Perceived Strategy Restrictiveness, *MIS Quarterly*, Vol. 33, No. 2: 293 – 320

Wang, Y.-S. and Liao, Y.-W., (2008a), Assessing eGovernment system success: A validation of the DeLone and McLean model of information systems success, *Government Information Quarterly*, Vol. 25, Issue 4: 717 - 733

Wang, Y.-S. and Liao, Y.-W., (2008b), Understanding Individual Adoption of Mobile Booking Service: An Empirical Investigation, *CyberPsychology & Behavior*, Volume 11, Number 5: 603 - 605

Wansink, B., (2003), Using laddering to understand and leverage a brand's equity*, Qualitative Market Research: An International Journal,* Vol. 6, No. 2: 111 – 118

Warkentin, M., Gefen, D., Pavlou, P.A. and Rose, G.M., (2002), Encouraging Citizen Adoption of e-Government by Building Trust*, Electronic Markets*, Vol. 12, (3): 157 - 162

Warshaw, P.R., (1980), A New Model for Predicting Behavioral Intentions: An Alternative to Fishbein, *Journal of Marketing Research*, Vol. XVII, May: 153 - 172

Watson, R.T. and Zinkhan, G.M., (1997), Electronic commerce strategy: addressing the key questions, *Journal of Strategic Marketing*, 5: 189 – 209

Watson, R.T., Akselsen, S. and Pitt, L.F., (1998), Attractors: Building Mountains in the Flat Landscape of the World Wide Web*, California Management Review*, Vol. 40, No. 2: 36 – 56

Weijters, B., Rangarajan, D., Falk, T. and Schillewaert, N., (2007), Determinants and Outcomes of Customers' Use of Self Service Technology in a Retail Setting, *Journal of Service Research*, Vol. 10, No. 1: 3 – 21

Wells, J.D., Sarker, S., Urbaczewski, A. and Sarker, S., (2003), Studying Customer Evaluations of Electronic Commerce Applications: A Review and Adaptation of the Task-Technology Fit Perspective, in: *Proceedings of the 36th Hawaii International Conference on System Sciences (HICSS'03)*, IEEE

Wells, W.D., (2001), The Perils of N=1, *Journal of Consumer Research*, Vol. 28, December: 494 - 498

Weltevreden, J.W.J., (2007), Substitution or complementarity? How the Internet changes city centre shopping, *Journal of Retailing and Consumer Services*, 14: 192 – 207

Weltevreden, J.W.J. and Van Rietbergen, T., (2007), E-Shopping Versus City Centre Shopping: The Role Of Perceived City Centre Attractiveness, *Tijdschrift voor Economische en Sociale Geografie*, Vol. 98, No. 1: 68 – 85

Wernerfelt, B., (1984), A Resource-Based View of the Firm, *Strategic Management Journal*, Vol. 5, No. 2: 171 – 180

Westerman, S.J., Tuck, G.C., Booth, S.A. and Khakzar, K., (2007), Consumer decision support systems: Internet versus in-store application, *Computers in Human Behavior*, 23: 2928 - 2944

Wheeler, S.C., Petty, R.E. and Bizer, G.Y., (2005), Self-Schema Matching and Attitude Change: Situational and Dispositional Determinants of Message Elaboration, *Journal of Consumer Research*, Vol. 31, March: 787 – 797

Whitley, B.E. jr., (1997), Gender Differences in Computer-Related Attitudes and Behavior: A Meta-Analysis, *Computers in Human Behavior*, Vol. 13, No. 1: 1 – 22

Widrick, S.M. and Hibbs, J., (1985), Negative reinforcement theory: Speed of purchase when buying a negative product, *Southeast American Institute for Decision Science*, February: 228 - 230

Wigand, R.T., Electronic Commerce: Definition, Theory, and Context, *The Information Society*, 13: 1 – 16

Wikström, S., (2005), From E-Channel to Channel Mix and Channel Integration, *Journal of Marketing Management*, 21: 725 – 753

Wilkie, W.L. and Pessemier, E.A., (1973), Issues in Marketing's Use Of Multi-Attribute Attitude Models, *Journal of Marketing Research*, Vol. X, November: 428 - 441

Willcocks, L.P. and Plant, R., (2001), Pathways to E-Business Leadership: Getting from Bricks to Clicks, *MIT Sloan Management Review*, Spring: 50 – 59

Wilcox, J.B. and Austin, L.M., (1979), A Method for Computing the Average Spearman Rank Correlation Coefficient from Ordinally Structured Confusion Matrices, *Journal of Marketing Research*, Vol. XVI: 426 - 428

Williamson, O.E, (1975), *Markets and hierarchies: Analysis and antitrust implications*, Free Press, New York

Williamson, O.E., (1985), *The economic institutions of capitalism*, Free Press, New York

Williamson, O.E., (1996), Economics and Organization: A Primer, *California Management Review*, Vol. 38, No. 2: 131 - 146

Williamson, O.E., (2002), The Theory of the Firm as Governance Structure: From Choice to Contract, *Journal of Economic Perspectives*, Vol. 16, No. 3: 171 – 195

Willimack, D.K., Schuman, H., Pennell, B. and Lepkowski, J.M., (1995), Effects Of A Prepaid Nonmonetary Incentive On Response Rates And Response Quality In A Face-To-Face Survey, *Public Opinion Quarterly Volume*, 59: 78 - 92

Wilson, A., (2006), *Marketing Research*, second edition, Prentice Hall, Pearson Education Limited, Harlow, England

Wimmer, M.A., (2002), Integrated Service Modelling for Online One-stop Government, *Electronic Markets*, Vol. 12, (3): 149 – 156

Wimmer, M., Codagnone, C. and Janssen, M., (2008), Future e-government research: 13 research themes identified in the eGovRTD2020 project, in: *Proceedings of the 41st Hawaii International Conference on System Sciences*, IEEE

Winer, R.S., (1999), Experimentation in the 21st Century: The Importance of External Validity, *Journal of the Academy of Marketing Science*, Vol. 27, No. 3: 349 - 358

Wittink, D.R. and Cattin, P., (1989), Commercial Use of Conjoint Analysis: An Update, *Journal of Marketing*, Vol. 53, July: 91 – 96

Wittink, D.R., Vriens, M. and Burhenne, W., (1994), Commercial use of conjoint analysis in Europe: Results and critical reflections, *International Journal of Research in Marketing*, 11: 41 - 52

Wixom, B.H. and Todd, P.A., (2005), A Theoretical Integration of User Satisfaction and Technology Acceptance, *Information Systems Research*, Vol. 16, No. 1: 85 – 102

Wolfinbarger, M. and Gilly, M.C., (2003), Shopping Online for Freedom, Control, and Fun, *California Management Review*, Vol. 43, No. 2: 34 -55

Wolverton, M.L., (2009), Research Design, Hypothesis Testing, and Sampling, *The Appraisal Journal*, Fall: 370 - 382

Wong, B., (2002), The Appropriateness of Gutman's Means-End Chain Model in Software Evaluation, in: *Proceedings of the 2002 International Symposium on Empirical Software Engineering*, (ISESE'02), IEEE

Wood, R. and Bandura, A., (1989), Social Cognitive Theory of Organizational Management, *Academy of Management Review*, Vol. 14, No. 3: 361 – 384

Wright, P., (1975), Consumer Choice Strategies: Simplifying Vs. Optimizing, *Journal of Marketing Research*, Vol. XII, February: 60 – 67

Wright, P. and Rip, P.D., (1980), Product Class Advertising Effects on First-Time Buyers' Decision Strategies, *Journal of Consumer Research*, Vol. 7, September: 176 - 188

Wu, J. and Rangaswamy, A., (2003), A Fuzzy Set Model of Search and Consideration with an Application to an Online Market, *Marketing Science*, Vol. 22, No. 3: 411 – 434

Wu. J.-H. and Wang, S.-C., (2005), What drives mobile commerce? An empirical evaluation of the revised technology acceptance model, *Information & Management*, 42: 719 - 729

Wu, S.-I., (2006), A comparison of the behavior of different customer clusters toward Internet bookstores, *Information & Management*, 43: 986 – 1001

Wünderlich, N.V., (2009), *Acceptance of Remote Services*, Dissertation Technische Universität München, Gabler, Wiesbaden

Wuyts, S. Stremersch, S. Van den Bulte, C. and Franses, P.H., (2004), Vertical Marketing Systems for Complex Products: A Triadic Perspective, *Journal of Marketing Research*, Vol. XLI, November: 479 - 487

X

Xia, L. and Sudharshan, D., (2002), Effects of Interruptions on Consumer Online Decision Process, *Journal of Consumer Psychology*, 12 (3): 265 – 280

Y

Yang, B. and Lester, D. (2005), Gender differences in e-commerce, *Applied Economics*, 37: 2077 – 2089

Yang, C., Hsu, Y.-C. and Tan, S., (2010), Predicting the Determinants of Users' Intentions for Using YouTube to Share Video: Moderating Gender Effects, *Cyberpsychology, Behavior, and Social Networking*, Vol. 13, Number 2: 141 – 152

Yang, H. and Zhou, L, (2011), Extending TPB and TAM to mobile viral marketing: An exploratory study on American young consumers' mobile viral marketing attitude, intent and behavior, *Journal of Targeting, Measurement and Analysis for Marketing*, Vol. 19, 2: 85 – 98

Yang, K.C.C., (2004), Effects of Consumer Motives on Search Behavior Using Internet Advertising, *CyberPsychology & Behavior*, Vol. 7, Number 4: 430 – 442

Yang, S., Lu, Y. and Chau, P.Y.K., (2013), Why do consumers adopt online channel? An empirical investigation of two channel extension mechanisms, *Decision Support Systems*, 54: 858 - 869

Yang, S., Park, J. and Park, J., (2007), Consumers' channel choice for university-licensed products: Exploring factors of consumer acceptance with social identification, *Journal of Retailing and Consumer Services*, 14: 165 – 174

Yee, M., Dahan, E., Hauser, J.R. and Orlin, J., (2007), Greedoid-Based Noncompensatory Inference, *Marketing Science*, Vol. 26, No. 4: 532 - 549

Yen, H.R., (2005), An Attribute-Based Model of Quality Satisfaction for Internet Self-Service Technology, *The Service Industries Journal*, Vol. 25, No.5: 641 – 659

Yi, Y. Wu, Z. and L.L. Tung, (2005/2006), How Individual Differences Influence Technology Usage Behavior? Toward An Integrated Framework, *Journal of Computer Information Systems*, Winter: 52 - 63

Yip, G.S., (2000), Global Strategy in the Internet Era, *Business Strategy Review*, Vol. 11, issue 4: 1 – 14

Yiu, C.S., Grant, K. and Edgar, D., (2007), Factors affecting the adoption of Internet Banking in Hong Kong – implications for the banking sector, *International Journal of Information Management*, 27: 336 - 351

Yoon, S.-O. and Simonson, I., (2008), Choice Set Configuration as a Determinant of Preference Attribution and Strength, (2008), *Journal of Consumer Research*, Vol. 35, August: 324 - 336

Young, S. and Feigin, B., (1975), Using the Benefit Chain for Improved Strategy Formulation, *Journal of Marketing*, July: 72 – 74

Young-Ybarra, C. and Wiersema, M., (1999), Strategic Flexibility in Information Technology Alliances: The Influence of Transaction Cost Economics and Social Exchange Theory, *Organization Science*, Vol. 10, no. 4: 439-459

Z

Zeithaml, V.A., (1988), Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence, *Journal of Marketing*, Vol. 52, July: 2 - 22

Zeithaml, V.A., Berry, L.L. and Parasuraman, A., (1996), The Behavioral Consequences of Service Quality, *Journal of Marketing*, Vol. 60, April: 31 – 46

Zeithaml, V.A. and Gilly, M.C., (1987), Characteristics Affecting the Acceptance of Retailing Technologies: A Comparison of Elderly and Nonelderly Consumers, *Journal of Retailing*, Vol. 63, No. 1: 49 - 68

Zeithaml, V.A., Parasuraman, A. and Berry, L.L., (1985), Problems and Strategies in Services Marketing, *Journal of Marketing*, Vol. 49: 33 – 45

Zeithaml, V.A., Parasuraman, A. and Malhotra, A., (2002), Service Quality Delivery Through Web Sites: A Critical Review of Extant Knowledge, *Journal of the Academy of Marketing Science*, Vol. 30, No. 4: 362 - 375

Zeng, M. and Reinartz, W., (2003), Beyond Online Search: The road to profitability, *California Management Review*, Vol. 45, No. 2: 107 – 130

Zhang, J., Fang, X. and Liu Sheng, O.R., (2006/7), Online Consumer Search Depth: Theories and New Findings, *Journal of Management Information Systems*, Vol. 23, No. 3: 71 – 95

Zhang, P., Von Dran, G.M., Small, R.V. and Barcellos, S., (1999), Websites that Satisfy Users: A Theoretical Framework for Web User Interface Design and Evaluation, in: *Proceedings of the 32nd Hawaii International Conference on System Sciences*, IEEE

Zhou, T., Lu, Y. and Wang, B., (2010), Integrating TTF and UTAUT to explain mobile banking user adoption, *Computers in Human Behavior*, 26: 760 - 767

Ziebarth, G.E. and Wang, X.-T., (2009), Consumers' Preference for Choice Strategies Examined In Two Task Domains, in: Saito, F. (ed.), *Consumer Behavior*, Nova Science Publishers, New York: 151 - 167

Zigurs, I. and Buckland, B.K., (1998), A Theory of Task/Technology Fit and Group Support Systems Effectiveness, *MIS Quarterly*, September: 313 – 334

Zmud, R.W., (1979), Individual Differences and MIS Success: A Review of the Empirical Literature, *Management Science*, 25, 10: 966 - 979

Zviran, M., Glezer, C. and Avni, I., (2006), User satisfaction from commercial web sites: The effect of design and use, *Information & Management*, 43: 157 - 178

Zwass, V., (2003), Electronic Commerce and Organizational Innovation: Aspects and Opportunities, *International Journal of Electronic Commerce*, Vol. 7, No. 3: 7 - 37

APPENDICES

Academy of Management Journal
Academy of Management Review
ACM
Acta Psychologica
Acta Sociologica
Administrative Science Quarterly
Advances in Consumer Research
Annual Review of Psychology
Annual Review of Sociology
Applied Computing and Informatics
Applied Economics
Behaviour & Information Technology
Business Strategy Review
California Management Review
Communications of the ACM
Communications of the Association for Information Systems
Computers in Human Behavior
CyberPsychology&Behavior
CyberPsychology, Behavior and Social Networking
Database Marketing & Customer Strategy Management
Decision Sciences
Decision Support Systems
Electronic Commerce Research and Applications
Electronic Markets
e-Service Journal
European Business Journal
European Journal of Marketing
European Journal of Operational Research
European Management
Expert Systems with Applications
Financial Services Review

Government Information Quarterly
Harvard Business Review
Human Systems Management
Industrial Marketing Management
Information & Management
Information Strategy: The executive's journal
Information Systems Journal
Information Systems Management
Information Systems Research
Information Technology, Learning and Performance Journal
Interacting with Computers
Interfaces
International Journal Human-Computer Studies
International Journal of Advertising
International Journal of Bank Marketing
International Journal of Consumer Studies
International Journal of Electronic Commerce
International Journal of Electronic Commerce in Organizations
International Journal of Human-Computer Interaction
International Journal of Human-Computer Studies
International Journal of Information Management
International Journal of Information Technology & Decision Making
International Journal of Management
International Journal of Management Reviews
International Journal of Market Research
International Journal of Mobile Marketing
International Journal of Research in Marketing
International Journal of Retail & Distribution Management
International Journal of Service Industry Management
International Journal of the Economics of Business
International Marketing Review
International Review of Retail, Distribution and Consumer Research

Internet Research
Journal of Academy of Marketing Science
Journal of Advertising
Journal of Advertising Research
Journal of Applied Psychology
Journal of Applied Social Psychology
Journal of Applied Statistics
Journal of Association for Information Systems
Journal of Business
Journal of Business and Management
Journal of Business and Psychology
Journal of Business Communication
Journal of Business Research
Journal of Business Strategy
Journal of Computer Information Systems
Journal of Consumer Affairs
Journal of Consumer Behaviour
Journal of Consumer Marketing
Journal of Consumer Psychology
Journal of Consumer Research
Journal of Current Issues and Research in Advertising
Journal of Database Marketing
Journal of Economic Issues
Journal of Economic Literature
Journal of Economic Perspectives
Journal of Economic Psychology
Journal of Economics & Management Strategy
Journal of Electronic Commerce in Organizations
Journal of Electronic Commerce Research
Journal of Experimental Psychology
Journal of Experimental Social Psychology
Journal of Financial Services Marketing

Journal of Information Systems
Journal of Information Technology
Journal of Interactive Advertising
Journal of Interactive Marketing
Journal of International Marketing
Journal of Leisure Research
Journal of Machine Learning Research
Journal of Management
Journal of Management Information Systems
Journal of Management Research
Journal of Management Studies
Journal of Marketing
Journal of Marketing Communications
Journal of Marketing Management
Journal of Marketing Research
Journal of Marketing Theory and Practice
Journal of Organization Computing and Electronic Commerce
Journal of Product Innovation Management
Journal of Public Policy & Marketing
Journal of Retailing
Journal of Retailing and Consumer Services
Journal of Service Research
Journal of Services Marketing
Journal of Strategic Information Systems
Journal of Strategic Marketing
Journal of Targeting, Measurement and Analysis for Marketing
Journal of the Academy of Marketing Science
Journal of the Association for Information Systems
Journal of Theoretical and Applied Electronic Commerce Research
Management Science
Management Services
Marketing Bulletin

Marketing Letters
Marketing Management Journal
Marketing News
Marketing Research
Marketing Science
MIS Quarterly
MIT Sloan Management Review
Omega
Organization Science
Organizational Behavior and Human Decision Process
Organizational Dynamics
Organizational Science
Psychological Bulletin
Psychological Inquiry
Psychological Science
Psychology & Marketing
Public Opinion Quarterly
Quarterly Journal of Economics
Quarterly Journal of Electronic Commerce
SAM Advanced Management Journal
Sloan Management Review
Strategic Management Journal
Strategy+Business
Technology Analysis & Strategic Management
Technovation
Telematics & Informatics
The American Economic Review
The American Economist
The Database for Advances in Information Systems
The Economic Journal
The Information Society
The International Review of Retail, Distribution and Consumer Research

The Journal of Business Communication
The Journal of Consumer Affairs
The Journal of General Psychology
The Journal of Psychology
The Journal of Services Marketing
The Journal of Social Psychology
The Marketing Review
The Quarterly Journal of Economics
The Service Industries journal
Thinking & Reasoning

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Agarwal and Karahanna, 2000 MIS Quarterly	Students	Net 288	TAM and other constructs to explain use of the Web	Based on Davis and Ajzen and Fishbein
Ahn et al. 2004 Electronic Commerce Research and Applications	Banner on six (among top 10) shopping malls	Net 932 Gross Unknown	Use TAM for explaining us of Internet shopping malls	Based on previous research
Anckar 2003 e-Service Journal	Stratified sample procedure 16-74 age; Finish electronic sampling frame;	Net 485 Gross 1000	Intentions to purchase travel services online	Own research
Ariely (2000) Journal of Consumer Research	Students; five experiments; rewards	36 40 144 72 40	Controlling the information flow Cameras	Own research
Balabanis and Vassileiou 1999 Journal of Marketing Management	Students; reasons given	Net 102 Gross Unknown	Consumer related factors (like income, involvement) as predictors for online shopping Casual clothes	Own research
Bart et al. 2005 Journal of Marketing	Sample of National Family Opinion's online panel	Net 6831 Gross 92,726 prescree-ner; 10,000? invitations	How does the role of antecedents and trust vary by Web site category and consumer segment Automobile Travel, Finance, E-tailer, Computer, Community, Sports, Portal	Questionnaire based on exploratory study\and a qualitative study; pilot among MBA students; questionnaire available
Bechwati and Xia 2003 Journal of Consumer Psychology	Students; two surveys	Net 108 52	Perceived effort of online decision aids Job	Testing hypotheses not related to a model

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Bendoly et al. 2005 Journal of Service Research	Clients of three firms, minimal of 5 online and 5 off line purchases	Net 1598 in two stages	Does channel integration help if products are not available online or offline	Testing hypotheses not related to a model
Bhattacherjee 2001a MIS Quarterly	Customer base of online banking division	Net 122 Gross 1000	EDT tested with online banking Online banking	Constructs: user intention, satisfaction, perceived usefulness and confirmation available; based on previous research
Bhattacherjee 2001b Decision Support Systems	Messages on 100 online message boards	Net 172	EDT tested with online brokerage Online brokerage	Questionnaire available
Biswas and Biswas 2004 Journal of Interactive Marketing	Graduate and undergraduate students Course credit	Net 227 113 119	Effects of retailer reputation, perceived advertising expenses and warranties on consumer risk perceptions online and in store shopping Dress shirt/jeans CD	7-point scale; questionnaire available
Browne et al., 2004 Behaviour & Information Technology	Students Consumers of Best Buy	Net 605 stud 1397 cons	Use of the Internet before shopping	No model used
Cai and Xu 2006 Electronic Commerce Research and Applications	Students and working people	Net 89	Customer value is measured as outcome value and process value in online shopping Several products	Questionnaires from other surveys
Carter and Belanger 2005 Information Systems Journal	Citizens at a community concert	Net 105 Gross 106	Using TAM, IDT and trust to explain intention to use e-government	Use of constructs of models; questionnaire available

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Cases 2002 International Review of Retail, Distribution	Targeted sample in France; asked by mail (not e-mail)	Net 471 of which 247 were suitable (Internet experience or intention) Gross 800	Understand the relation between risk perception and risk reduction; describe this in a context of electronic shopping Clothing industry: jacket	Questionnaire available
Cazier et al. 2006 Information & Management	Students	Net 297	Building trust Bookstore	5 point Likert; questions available
Chau et al. 2002 Communications of the ACM	Students in Hong Kong and USA	Net 269 Gross Unknown	Cultural influence on online behavior of consumers	Testing hypotheses not related to a model
Chau and Lai 2003 Journal of Organization Computing and Electronic Commerce	Business executives pursing advanced business degrees at a major university in Hong Kong on a part-time basis	Net 167 Gross 424	TAM tested Internet banking	Pretest of the questionnaire; 7-point Likert scale
Chen and Hitt 2002 Information Systems Research	Panel of more than 25,000 households with applet installed in their computer		Switching behavior partly based on DeLone&McLean model Online brokerage	Based on other research
Cheng et al. 2006 Technovation	Students	Net 447	Use of Internet in Taiwan	Based on other research; Likert 7 point
Chiang et al. 2006 Decision Support Systems	Students and non students (non student adult members; extra credit)	Net 175 students 49 non students	Buying products through the Internet Book, Shoes, DVD, Toothpaste, Flowers Food	Testing network models

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Chih-Chung and Chang, 2005 Journal of Business and Management	Students	Net 426 Gross Unknown	TPB and online shopping	Development of own questions
Cho 2006 Information & Management	Students and employees in public organizations and government departments	Net 187 Gross 300	Trust and risks Online legal services	Questionnaire available
Choudhury and Karahanna, 2008 MIS Quarterly	Faculty and staff of a large university	Net 499 Gross 2187	Relative advantage of electronic channels varies per stage of the purchase process Car insurance	Based on previous research
Chu et al. 2005 International Journal of Electronic Commerce	Sample of students under graduate marketing management course Seoul National University	Net 102	Influence of reputation of online retailer and brand	Testing own hypotheses
Collier and Bienstock, 2006 Journal of Service Research	Students with reasons	Net 266	Measuring service quality in e-retailing	Likert 5-point scale pretest
Crosno et al. 2007 Journal of Retailing and Consumer Services	Three samples: e-consumer database; face-to-face interviews at retail stores student sample	Net 203 (10% response rate) 101 (70 % response rate) 106 (53 % response rate	Role of trust in the use of new channels in the music industry Music	Measures of institutional and relational trust
Curran et al. 2003 Journal of Service Research	Random sample; phone interviews	Net 628 Gross 2352	Use of SST in banking industry: ATM, bank-by-phone, online banking	Likert 7-point

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Cyr et al. 2007 Interacting with Computers	Students	Net 185	TAM, trust, enjoyment and social presence in explaining e-loyalty Concert tickets	Likert
Dadzie et al. 2005 International Journal of Electronic Commerce	Employees of two South Eastern universities; got a chance to win a lottery of $100 Questionnaire was completed; not clear how	Net 373 Gross 470	Factors that determine the level of perceived logistics customer service (LCS) in the Internet enabled supply chain	Based on other authors; questions available
Danaher et al. 2003 Marketing Science	Online data from grocery retailer; data from households with at least six purchases in year of survey (1998); Offline panel from ACNielsen	Net 601 443	Brand loyalty in online and offline shopping environ-ments Grocery	Conjoint analysis
Devaraj et al. 2002 Information Systems Research	Community shoppers from social and cultural organization and students in business administration; private university	Net 134 Gross 200	Constructs from TAM, Transaction Cost Analysis and SERVQUAL to explain online consumer satis-faction	Previous literature; 7-point Likert scale; questionnaire available
Devlin and Yeung 2003 International Review of Retail, Distr. and Cons. Res.	Data from market research company; data were already there; no influence on questionnaire	Net 3804	Why do consumers switch to Internet banking Financial services	5-point scale; statements available
Dholakia and Chiang 2003 Journal of Consumer Psychology	Students; extra credit	Net 110	Is e-shopping associated with gender specific stereotypes	7-point scale;

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Dholakia et al. 2005 Journal of Interactive Marketing	Data from retailer with catalog, store, Internet	530,000	Multi-channel behavior	Own hypotheses testing
Donthu and Garcia 1999 Journal of Advertising Research	Random telephone interviews; Internet active (used at least once in last month)	Net 790 Gross 2000	Who is the Internet shopper	
Esper et al. 2003 Journal of Business Logistics	Members of a statewide household research panel and students	Net 222 123 Gross 540	Online retail delivery effect on consumers	Own hypotheses testing
Ethier et al. 2006 Information & Management	Students; reward of $ 10	215 shopping episodes	Web site quality and emotions CD's and movie DVD's	9 point Likert scale McKnight et al. measurement of quality of web site
Everard and Galletta 2005 Journal of MIS	Students	Net 272	Trust and intention to purchase related to perceived site quality Books	Based on research; questionnaire available
Fiore et al. 2005 Journal of Interactive Marketing	Undergraduate majors from a large mid-western university	Net 206 Gross Unknown	Effects of image interactivity technology on	
Flavian et al. 2006 Information & Management	Questionnaire posted on the Internet, banners, discussion panels	Net 351	Influence of usability satisfaction and trust on website loyalty	Own hypotheses tested
Gefen and Straub 2000 Journal of the Association for Information Systems	MBA students at a large business school	Net 217	Explaining influence of PEOU related to task (intrinsic or extrinsic) books	Review of articles about TAM 1989-2000; samples included

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Gefen 2002 Journal of the AIS	Students using Amazon.com	Net 160 Gross 217?	SERVQUAL and trust and loyalty in online shopping Amazon.com	Review of service literature Questionnaire available; 7 point Likert
Gefen et al. 2003 MIS Quarterly	Students	Net 213 Gross 400	TAM and Trust to explain online shopping by experienced shoppers CDs/Books	7 point scale pre test among students; based on other research; questionnaire available
Gefen and Straub 2003 e-Service Journal	MBA Students	Net 161	User trust in e-Services Travelocity.com	Based on Davis and others
Geissler et al. 2006 Journal of Advertising	Students; with explanation	Net 360 Gross Unknown	Home page complexity and Internet use music store	Own hypotheses tested
Goldsmith 2002 Journal of Marketing Theory and Practice	Students; extra credits	Net 107	Intention to buy online	Based on previous research
Gounaris et al. 2005 Journal of Marketing Mgt.	Sample of Internet provider in Greece; online shoppers	Net 240 Gross 1052	Antecedents of perceived e-Service Quality	Based on research; questionnaire available
Grewal et al. 2004 Journal of Interactive Marketing	Students	53 253	Role of price differences on trust, repurchase intentions	Based on past research
Gu et al., 2009 Expert Systems with Applications	Customers who used mobile banking service within bank in Korea	Net 940	Factors that contribute to the intention to use of mobile banking services; based on TAM	Pretest on 30 30 customers

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Gupta et al. 2004 International Journal of Electronic Commerce	Sample of 50,000 e-mails from a private company; people who had sent in warranty cards for computer hardware and software	Net 337 Gross 18,988	Explanation of channel switching behavior from off-line to on-line Airline tickets, books stereo systems, wine	Pilot survey on paper (students);
Gupta et al. 2005 Advances in Consumer Research	Students and visitors of local library	Net 162 students 120 visitors Gross not mentioned	Scale for perceived web site complexity 48 websites, not specified	Scales developed with free association tasks; pilot study in university. Questionnaire available; Likert scale used
Hampton-Sosa Koufaris 2005 International Journal of Electronic Commerce	Undergraduate and graduate students of northeastern US university; paid $10, lottery of $ 100. Websites visiting and online questionnaire	Net 111 Gross Unknown	How does a website affects customer's development of initial trust beliefs after a first visit to the site Laptops Flight ticket to California	7 point Likert scale; design based on previous research; questions available
Håubl and Trifts 2000 Marketing Science	Undergraduate business students	Net 249	Use of interactive decision aids	Pilot with 80 psychology students
Herrero and Del Bosque, 2008a Computer in Human Behavior	Internet users	Net 998	Acceptance of electronic commerce; TPB	Based on previous research
Hitt and Frei 2002 Management Science	Data of customers from financial institutions		Is de PC-banker more profitable Financial industry	Actual use
Holzwarth et al. 2006 Journal of Marketing	Two studies; German shoppers	Net 400 596	Influence of the use of Avatars on online shopping behavior	Own hypotheses tested

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Hong et al. 2004 Journal of Management Information Systems	Undergraduate students; money incentive	Net 118 Gross Unknown	Relation between information format and shopping task (goal-experience) Grocery	Own hypotheses tested
Hoque and Lohse 1999 Journal of Marketing Research	Students; incentive	Net 177	Web design and search for infor- mation Yellow pages look alike	Own hypotheses tested
Hsu and Chiu, 2004 Behaviour & Information Technology	Questionnaires were sent to IS managers of top 100 companies in Taiwan; asked to distribute among 8 employees	Net 149	Extended TAM + EDT Web-based tax filling service	Based on previous research
Hui et al. 2006 ACM Transactions on Internet Technology	Students	Net 316 331 199	When are consumers willing to disclose online personal information	Focus group test; pilot research; Likert scale
Im et al., 2008 Information & Management	Students	Net 161	Use of communication technologies by students during a group decision making task	TAM, Likert scale
Jiang et al. 2000 Human Systems Management	Students business schools in US, Hong Kong and France	Net US 120 Gross US 300 Net other 215 Gross Unknown	Modifying the TAM to fit the Internet context	5-point Likert scale; questionnaire available
Jiang and Benbasat 2004 Journal of Management Information Systems	Students	Net 80	Effects of virtual and functional control on perceived diagnosticity and flow in electronic shopping watches	Own questionnaire

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Johnson et al. 2004 Management Science	Panel data analyzed; click stream data	Net 10,000	Books, CD's, air travel services	Actual behavior
Khalifa and Liu 2003 Journal of the AIS	New members of online community were invited to answer online survey	Net 107 (after the second stage) Gross 356	EDT: desires or expectations disconfirmation	Longitudinal; questionnaire available
Kim et al. 2002 (TAM) Information Systems Research	Respondents were recruited by banner advertisements on several popular Korean Web sites; online survey	Net 3462 Gross Unknown	Architectural constructs are used for Internet websites	7-point Likert scale;
Kim et al. 2004 Journal of the AIS	visitors online bookstore through a banner	Net 1191 repeat 161 potential	Trust building factors for repeat and potential customers of online bookstore Online bookstore	Questionnaire available;
Kim et al. 2006 Information & Management	Panel of an online research company	Net 1480 Gross Unknown	When/why do people switch their e-mail service provider	7-point Likert; questionnaire available
Kim et al. 2007 Journal of Retailing and Consumer Services	Students	Net 206	Use of Image Interactive Technology (3D virtual models) apparel	
Kim and Malhotra 2005 Management Science	Students; two wave survey	Net 298 189 Gross 1000 298	Based on TAM: experience with a system and explanations Portal website	Based on previous research

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Kim and Son, 2009 MISQ	Database from marketing research company	Net 529 Gross 2100	TAM + satisfaction + switching costs; based on social exchange theory Use of a portal	based on research
Kim et al., 2009 Expert Systems with Applications	Students	Net 542 Gross 700	Use of mobile data services; TAM	Pilot research 63 students
Klaus et al. 2003 Human Systems Management	Business students;	Net 202 Gross Unknown (220?)	Are Task Technology Fit and TAM applicable for non work activities	Focus groups of students to create questionnaire;
Klein and Ford 2003 Journal of Interactive Marketing	Surveys posted on a website; buyers of a car and planners of purchasing a car within next 6 months and e-mail list (6% response p. 36)	Net 339 Gross Unknown	Search behavior for automobiles	Actual behavior
Kohli et al. 2004 International Journal of Electronic Commerce	Shoppers in a community and students BA at a private university	Net 134 Gross Unknown	Modeling online consumer decision making steps Online transactions	Own hypotheses tested
Kolsaker et al. 2004 International Journal of Consumer Studies	5000 e-mail addresses; sample of 1000;	Net 120 Gross 1000	Online airline tickets	Own research
Komiak et al. 2005 e-Service Journal	Undergraduate students Canadian university	Net 44	Trust building in virtual salespersons	Own research
Ko et al., 2005 Journal of Advertising	Students in US and Korea	Net 408	U&G theory tested for Internet use and purchase intention Printer	Based on previous research

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Koo 2006 Electronic Commerce Research and Applications	Convenience sample South Korea; users of Internet with shopping experience within previous three months	Net 353 Gross 400	Personal values as underlying motive for shopping online	Based on previous research
Korgaonkar and Wolin, 1999 Journal of Advertising Research	Consumers from a large metropolitan area; Web users; face-to-face	Net 401 Gross	Characteristics of web user	Based on previous research
Koufaris 2002 Information Systems Research	Sample from database of Dynamic Logic in. Incentive $10, lottery chance	Net 280 Gross Unknown	Test TAM, consumer behavior and psychology (flow and environmental psychology) constructs to explain the intention to return to a website Bookstore	7-point scale; based on other research (among them Davis); questionnaire available
Koufaris et al. 2001 International Journal of Electronic Commerce	Customer base of Kozmo; 1300 clients Electronic questionnaire; incentive free video rental	Net 332 Gross 1300	Factors that lead to online loyalty and unplanned purchases online DVD	Own research
Kuan and Bock 2007 Information & Management	Customers of supermarket in Asia	Net 246	Is offline trust important in forming online trust supermarket	Based on previous research
Kwak et al. 2002 Journal of advertising research	Panel	Net 307	What products can be successfully sold via the Internet	Own research
Koyuncu and Lien 2005 Applied Economics	Study by Georgia Institute of Technology 1998	Net 8717	Consumer characteristics	Actual behavior
Lai and Li 2005 Information & Management	Students (business graduate students Hong Kong)	Net 241 Gross 312	Testing TAM and Internet banking acceptance for different groups: age/gender/IT competence	Questionnaire pre tested; based on Davis; available

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Lam and Lee 2006 Journal of MIS	Advertisements for free computer training	Three studies	SCT tested for older adults (55+)	Based on previous research
Langerak et al. 2004 Advances in Consumer Research	Members of a virtual community aimed at youngsters (14 – 24 years)	Net 3605 (4.9 %) Gross 73851	Satisfaction and participation in virtual communities	Items for measuring the constructs were based on literature search, free-form interviews and online discussions Pretest
Lee et al. 2003 Communication of AIS	Students	Net 65	User satisfaction with online shopping	Based on other research; pre tested with e-commerce professionals
Li et al. 2006 The Data Base for Advances in Information Systems	Students	Net 390	Trust and e-commerce	Based on previous research
Liang and Huang, 1998 Decision Support Systems	Students and others	Net 86	Does risk and asset specificity play a role in the use of the Internet books, shoes, toothpaste, micro wave oven, flower	Own research
Liao and Cheung 2002 Information & Management	Regular web-users in Singapore; not specified; age young (20-35), education high	Net 323	Use of e-banking combined with perceived usefulness e-banking	Own research
Lightner et al. 2002 Behaviour & Information Technology	Turkish and American students	Net 300 T 64 A	Online shopping preferences for Turkish and American students	Own research

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Lim et al. 2006 Journal of MIS	Students	Net 174	The effect of portal association and peer reviews on the trust in a unknown online bookstore books	Own research
Liu et al. 2005 Information & Management	Students	Net 212	Effect of privacy on trust and of trust on intentions in e-commerce books	Likert 7-point; questionnaire available
Lokken et al. 2003 International Journal of Consumer Studies	Faculty and staff of a middle sized university; web based survey	Net 130 Gross 600	Benefits and risks of online shopping	Own research
Lu and Lin 2002 Information & Management	Students with reasons (future consumers, etc.)	Net 145	Consumer behavior in the market-space: TRA e-publishing	Own research
Lu and Rucker, 2006 Journal of Retailing and Consumer services	Female students in US and China	Net 203	Use of catalog and Internet for apparel buying Apparel	Own research
Lurie 2004 Journal of Consumer Research	Students; lottery incentive	Net 143	Buy online a pocket calculator	Actual behavior
Lynch and Ariely 2000 Management Science	Students	Net 72	Effect of lower search costs on price sensitivity Wine	Own research

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Madhavaram and Laverie 2004 Advances in Consumer Research	Convenience sample; screening questionnaire and in-depth questionnaire	Net 263 of which 22% had impulse buying on the Internet 57	Impulse purchasing on the Internet	Own research
Mandel and Johnson 2002 Journal of Consumer Research	Students Online panel members	76 s 385	Cars and sofas	Pilot with students
Mathwick et al. 2001 Journal of Retailing	Sample of catalog and Internet customers of direct retailer; by mail; no incentives	Net 515 Gross 2200	Experiential Value Scale (EVS) is developed and tested for catalog and Internet shopping Women's apparel and house wares	Previous research; pilot surveys;
McKinney 2004 International Journal of Consumer Studies	Random sample of a market research company; age 18 years and older; e-mail invitation; URL link; incentive	Net 370 Gross 1500	Atmospheric variables and Internet	Based on previous research and own research
McKinney et al. 2002 Information Systems Research	Undergraduate and graduate students large metropolitan university	Net 568	Measure Web-customer satisfaction during the information stage using EDT	Comments of 10 customers and experts; pilot of 47 ; second pilot of 47; Based on research 11 point scale; questionnaire available

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
McKnight et al. 2002 Information Systems Research also used in McKnight et al. 2004 e-Service Journal	Undergraduate and graduate students of three large univeristies; information systems majors and computer literacy class. First questionnaire; after that legal advice site because of broken airco Extra credit (0.8% to 2 % of course grade)	Net 1403 Gross Unknown	Develop and validate an instrument to measure cross disciplinary typology of trust constructs that apply to the Web context Legal advice site	First pilot tests; questionnaire with statements; available
McMillan et al. 2003 Journal of Advertising Research	Online panel of 2000 who have agreed to participate in academic research	Net 311 Gross 720	Attitude to the website Four hotel websites	Based on previous research
Meuter et al. 2005 Journal of Marketing	Sample from client base of sponsoring company	Net 905 734 Gross 2000 2000	Why use a Self Service Technology; first IVR, second study is use of Internet Ordering of medicines per IVR or Internet	Pilot study by 14 employees of sponsoring firm; questions based on literature; 7-point Likert scale questionnaire available
Miyazaki and Fernandez 2001 Journal of Consumer Affairs	Face-to-face interviews at an airport of a US city;	Net 160 Gross Unknown	Explore the relation between Internet experience levels and risk perceptions regarding privacy and security and online purchasing rates	Open ended data with respect to security and privacy were classified
Moe 2003 Journal of Consumer Psychology	Visitors of website e-commerce nutrition during 7 weeks in 2000	Net 5730 unique visitors	Types of shopping strategies and search behavior	Own research
Moe and Fader 2004 Management Science	Panel data of click stream behavior on the Internet; Media Metrix; Amazon.com behavior	Net 4379	Try to come to a statistical model for predicting visit/purchase rate Amazon.com	Own research

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Muthitacharoen et al. 2006 (b) Information & Management	Online survey among consumers and students	Net 320 consumer 115 students Gross 1000 c	How can a business' sales channel strategy influence consumers' sales channel preferences	7-point scale; questionnaire available
Muthitacharoen et al. 2006 (a) Electronic Markets	Online survey among consumers and students	Net 320 115 Gross 1000 c 491 s	TAM and task behaviors: searching and purchasing online	questionnaire available
Nelmapius et al. 2005 South African Journal of Business Management	Students of South African university	Net 120	Use of three dimensional Computer Mediated Environment as alternative to retail-shopping environment	Own research
Njite and Parsa 2005 Journal of Services Research	Students in an introductory accounting class	Net 96 Gross 105	Investigate factors that influence Internet purchasing. Holiday and travel packages	
Nöteberg et al. 2003 e-Service Journal	Online through banners situated at several websites, such as universities, research institutes, companies Sample shows 80% man;	Net 1109	Consumer trust in Electronic Channels	Own research
Novak et al. 2003 Journal of Consumer Psychology	GVU WWW User survey (1998) sample; selection out of 5206 respondents	Net 588 Gross 1312	Goal directed and experiential activities and online flow experiences	17 survey items measuring flow and related constructs
Parthasarathy and Bhattacherjee 1998 Information Systems Research	Subscribers of an online service firm	Net 145 Gross 1000	Diffusion of innovation theory tested on the discontinuance of online services	Based on previous research

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Pavlou 2003 International Journal of Electronic Commerce	Student sample and online consumer sample; incentive	Net 103 155 Gross Unknown 2000	Predict drivers of consumer intentions to accept e-commerce and integrate TAM with trust and risk literature	Based on previous research
Pavlou and Gefen 2004 Information Systems Research	Buyers at Amazon's auction site; international with about 85% from US	Net 274 188 ? follow up after 1 year Gross 1600	Trust in online auction with the help of feedback, escrow services and credit card guarantee as institutional mechanisms	Based on other research;
Pavlou and Fygenson 2006 MIS Quarterly	Students and Internet consumers; incentive	Net 134 cons. 179 stud. 312 Gross 1000 c 290 s	Extension of the TPB model by looking at the information and purchase stage	Several pretest to develop the constructs; 75 respondents. Larger pretest of 214 students.
Pechtl 2003 International Review of Retail, Distr. & Cons. R.	Randomly selected shoppers personally interviewed at the checkout of a large grocery store	Net 455 Gross Unknown	Acceptance of shopping for psychical goods on the Internet Grocery	Own research
Pennington et al. 2003 Journal of Management Information Systems	A sample from a Listserv; by e-mail instructed to visit a website and assume the role of an Internet shopper in search of a DVD player; 16 different web sites, created for the survey were viewed; questionnaire online	Net 266 Gross Unknown	Testing of a model of system trust as distinct from trust in vendor DVD player	Measures based on previous research
Perotti et al. 2003 Journal of Electronic Commerce in Organizations	Staff members of a private northeastern university	Net 198 Gross 683	Positive and negative reinforcement and Internet buying 17 product categories	Own research

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Rai et al. 2002 Information Systems Research	University employees; survey was about an university system	Net 274 Gross 908	DeLone & McLean model and Seddon model for IS success are tested University information system	Based on previous research Likert type Scale 1-5 and 7 point scale; questionnaire available
Ramaswami et al. 2000 International Journal of Electronic Commerce	National mail panel; income > $ 25,000	Net 413 Gross 700	Use of the online channel for purchasing financial products Financial products	Own research
Ratchford et al. 2001 International Journal of Electronic Commerce	Sample of 3000 new car buyers	Net 886 Gross 3000	Who uses the Internet What information do they seek and how effects the Internet the use of other sources Automobile	Actual behavior
Rensel et al. 2006 Journal of the AIS	Library visitors	Net 137 Gross 240	Testing facilitating conditional construct of Triandis Use of websites	Based on previous research
Roberts et al., 2003 Journal of Electronic Commerce in Organizations	Contacts of the authors electronically	Net 160 Gross 210	How customers perceive the Internet super-market compared to conventional Supermarket	Own research
Rodgers and Harris 2003 Journal of Advertising	Participants recruited by snowball method invited by students (for credits)	Net 227 Gross Unknown	Gender and e-commerce	Own research

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Schlosser 2003a Journal of Consumer Psychology	Undergraduate students; fulfillment of an introductory course	Net 143 Gross Unknown	Use of a computer for information search Sport car; fast food restaurant	Own research
Schlosser 2003b Journal of Consumer Research	Students; four tests	Net 56 171 151 169	Use of object interactivity to increase purchase intentions Digital camera	Own research
Schlosser et al. 2006 Journal of Marketing	University employees Undergraduate students Visiting of different websites Four studies Credits for students; $10 for employees	Net 111 79 152 98 Gross Unknown	Develop a conceptual framework for understanding how marketing signals influence consumers' trust in an e-commerce setting Furniture website Kodak digital camera	New scales + other surveys; 7-point scale; questionnaire available
Sen et al. 2006 Journal of Management Information Systems	Students; doctoral and postdoctoral researchers; incentive for the students	Net 273	Buyer's online search strategy Books, travel services, music CD, movie DVD, software	Own research
Shang et al. 2005 Information & Management	Students and online consumers	Net 650 stu 478 cons	Motivations to shop online	Based on previous research
Shim et al. 2001 Journal of Retailing	Sample of 2000 households with PC in 15 US cities; questionnaire by mail	Net 684 Gross 1974 (36% of relevant total)	Understand relation-ship between intention to use the Internet for information search and purchasing Videos, apparel, books, computer software, clothing accessories	Based on previous research

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Sismeiro and Bucklin 2004 Journal of Marketing Research	Web users of a major commercial web site in the automotive industry	96498 visitors; 1969 buyers (conversion rate of 2%)	Purchase behavior as a task completion	Own research
Son et al. 2006 Journal of AIS	Panel members of an online market research firm	Net 367 Gross 2000	TAM and TCE integrated to explain use of infomediaries Bizrate.com	Scales from other research; 7 point Likert
Song and Zahedi 2005 Management Science	Undergraduate students; extra credits, lottery		Effect of other shoppers opinions and experiences (kind of extended TPB; called Belief Reinforcement Model) Palm PC	Based on previous research
Soopramanien et al. 2007 Journal of Retailing and Consumer Services	Postal survey sent to households	Net 894 Response rate of 20 % ; lottery does not help (p. 76)	Adoption and usage of online shopping: analysis of the socio and other characteristics of the users	Based on previous research
Stafford and Gonier 2004 Communications of the ACM	AOL users	Net 915 Gross Unknown	What do Internet users like?	Own research
Stafford et al., 2004 Decision Sciences	AOL members	Net 1258	Theory of uses & gratifications tested for the Internet	Own research

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Stewart, 2003 Organizational Science	Students, e-mail solicitations and fliers posted in the vicinity of one university; incentive	Net 187 (70% students)	How is trust influenced by hypertext links and associations with traditional retail channel when coming to an unknown site laptop	Own research
Strebel et al. 2004 Journal of Consumer Psychology	Panel members; first contact by telephone; selected on planning buying PC > $ 1,200 Incentive	Net 350 Gross Unknown	Computer	Own research
Sundarraj and Wu 2005 Electronic Commerce Research and Applications	Students of Canadian university	Net 99 Gross 187	Testing of TAM model for banking technologies	Questionnaire based on others; available
Swaminathan 2003 Journal of Consumer Psychology	Students; incentive	Net 100	Impact of recommendation agents Tents and toothbrushes	Own research
Swoboda 1998 International Review of Retail, Distr. & Cons. R.	Visitors of music department stores	Net 750	Use of interactive multimedia systems CD's	Own research
Tan and Teo 2000 Journal of the AIS	Students (39%) in convenience sample in Singapore; online questionnaire personalized messages sent	Net 454 Gross 1686	Integrating TPB and IDT to predict intention to use Internet banking	Based on previous research
Teo, Tan and Peck 2004 Behaviour & Information Technology	Online clients of stock brokerage firm as sample of adopters Non adopters?	Net 208 adopt 222 non-ad	Characteristics of adopters of Internet stock broking in Singapore	Own research

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Thatcher and George 2004 Journal of organization computing and electronic commerce	Data of Graphics Visualization and Usability Center Georgia	over 400	TRA and trust and loyalty	Own research
Torkzadeh and Dhillon 2002 Information Systems Research	Students and students with working experience	Net 199 421 Gross Unknown	Measuring factors that influence the success of Internet commerce	Own research
Ueltschy et al. 2004 The Multinational Business Review	Students in three countries; explanation for use of students	Total 562	Influence of product/ service, experience and culture on online shopping Airline tickets, computers, clothing	Based on previous research
Van Baal and Dach 2005 Journal of Interactive Marketing	Panel of a market research company; online questionnaire for one week	Net 1094	Free riding	Actual behavior
Van der Heijden 2004 MIS Quarterly	Users of a Dutch movie website	Net 1144 Gross 5332	TAM and hedonic information systems Movie website	Based on previous research
Van Riel et al. 2004 Total Quality Management	convenience sample	Net 91 Gross 400	Which factors play a role in customer evaluation of online travel service quality; SERVQUAL model Travel	Based on previous research

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Van Slyke et al. 2002 Communications of the ACM	Sample in age from 17 – 48 old; not specified	Net 511 Gross Unknown	Gender differences in perception of web-based shopping	Adoption of innovations constructs (relative advantage, complexity etc.)
Váquez et al. 2005 The Service Industries Journal	Visitors of travel agency; frequent users; Spain On location (face to face)	Net 663 Gross Not known	Testing of hypotheses of trust Travel industry	Measurement scales of trust based on other research; questions available
Venkatesh and Ramesh 2006 MIS Quarterly	Undergraduate students in university in US and Finland Second study 766 visitors of Finnish theater; movie ticket E 15	Net 201 and 169 Gross Unknown	Web and Wireless site usability Airline industry Second study: banking, news, shopping, tourism	Operationali-zation available
Verhoef et al. 2007 International Journal of Research in Marketing	From database of MarketResponse; panel 40,000; 3000 members a short telephone survey to first select buyers of six categories of products/services; 2000 respondents remained; chosen 800; electronic survey	Net 345 Gross 800	Develop a model for understanding causes of research shopping Loans, vacations, books, computer, clothing, electronic appliances	Attributes for search and purchase costs and benefits based on literature; items based on Rust, Lemon, Zeithaml 2004
Walker and Johnson 2005 Journal of Financial Services Marketing	Face-to-face interviews in urban shopping centers	Net 180	Usage of Internet banking services	Own research
Wang and Benbasat 2005 Journal of the AIS	Students	Net 120 Gross Unknown	Trust-TAM model used for online recommendation agents digital camera	Based on previous research

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Wang and Benbasat, 2009 MIS Quarterly	Students	Net 156	Use of decision aids and different decision strategy	Based on previous research
Wang and Head 2007 Information & Management	Students	Net 186 Gross 300	Web characteristics that help to build customer relationships books/CDs/DVDs	Based on previous research
Weltevreden 2007 Journal of Retailing and Consumer Services	Online panel of Multiscope	Net 3218 30% response	Do Internet shoppers go less to the city centre	Actual behavior
Wu 2006 Information & Management	Students	Net 686 Gross 770	TPB and clusters of consumers Bookstores	Based on previous research
Xia and Sudharsan 2002 Journal of Consumer Psychology, 12 (3): 265 - 280	Students of a Midwestern university; no explanation offered. In PC room websites visiting	Four studies 89 62 40 33	Effects of interruptions on online decision process Modem or communication device	Own research
Yang and Lester 2005 Applied Economics	Students	Net 365	Gender differences in online shopping	Based on previous research
Yang et al., 2007 Journal of Retailing and Consumer Services	Students	Net 243	TAM and risk and information search motivation to explain the use of online shopping channels University licensed products	Based on previous research
Yang 2004 CyberPsychology & Behavior	Students	Net 120	Effects of consumer motives on search behavior	Based on previous research

AUTHORS AND JOURNAL	SAMPLE RECRUITMENT	SAMPLE SIZE	RESEARCH QUESTION AND TOPIC	QUESTIONNAIRE
Yen 2005 The Service Industries Journal	Students and their friends	Net 459	SST for Internet and Technology Readiness Bookstores, travel agency	Based on previous research
Zhang et al. 2006/7 Journal of Management Information Systems	Click stream data; same source as Johnson et al., 2004 other year		Search behavior	Own research
Zviran et al. 2006 Information & Management	Students; web based	Net 359	The effect of design and use on user satisfaction from web sites	

Version 1

1. Het onderzoek is voor de Universiteit van Amsterdam. (Ik beloof u dat ik u echt niets wil verkopen). Het onderzoek gaat over de wijze waarop mensen een reisverzekering afsluiten. Het duurt ongeveer 10 minuten.
Stel u voor dat u een paar weken op vakantie gaat. Voor deze reis wilt u graag een tijdelijke reisverzekering afsluiten; we gaan ervan uit dat u geen doorlopende reisverzekering heeft. U kunt dan op verschillende manieren een tijdelijke reisverzekering afsluiten. Heeft u wel eens een tijdelijke reisverzekering afgesloten?

ja, regelmatig	
ja, wel eens	
nee	

3. Voor het afsluiten van een tijdelijke reisverzekering kunnen verschillende aspecten in meer of mindere mate voor u van belang zijn. Ik noem u nu een aantal aspecten. Kunt u per aspect aangeven in hoeverre dat voor u van belang is. U kunt telkens antwoorden met een cijfer van 1 tot 7; 1 betekent dat het zeer onbelangrijk is, 7 betekent dat het zeer belangrijk is. En natuurlijk kunt u een cijfer daartussen noemen. Ik noem u nu de aspecten. Wilt u telkens een cijfer voor de belangrijkheid geven. <EVENTUEEL NA OPNOEMEN KENMERK VRAGEN: HOE BELANGRIJK IS DAT VOOR U?>

	zeer onbelangrijk (1) (2) (3)	onbelangrijk noch belangrijk (4) (5)	zeer belangrijk (6) (7)
Ik word goed geïnformeerd			
Ik kan de juiste keuzes maken			
Ik kan eenvoudig zaken afhandelen			
Ik hoef zo min mogelijk tijd te besteden			
Ik kan het doen wanneer ik het wil			
Ik kan gemakkelijk communiceren			
Ik heb controle			
Ik heb een veilig gevoel over mijn persoonlijke gegevens			

4. U heeft een aantal aspecten dezelfde score gegeven. Wilt u deze nog eens in volgorde zetten. <NOEM DE APSECTEN MET DEZELFDE SCORE; DE HOOGSTE SCORES EERST NOEMEN, DAARNA DE VOLGENDE; DE

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[74] The lay-out of the used questionnaire differs from the one presented here as the questionnaire in this appendix uses the lay-out of the thesis.

BELANGRIJKSTE KRIJGT SCORE 1, DE MINST BELANGRIJKE DE SCORE 8; ALLE KENMERKEN MOETEN EEN RANGNUMMER KRIJGEN>.

	Rang-nummer
Ik word goed geïnformeerd	
Ik kan de juiste keuzes maken	
Ik kan eenvoudig zaken afhandelen	
Ik hoef zo min mogelijk tijd te besteden	
Ik kan het doen wanneer ik het wil	
Ik kan gemakkelijk communiceren	
Ik heb controle	
Ik heb een veilig gevoel over mijn persoonlijke gegevens	

5. De volgende vragen gaan over de manieren waarop u een tijdelijke reisverzekering kunt afsluiten. U kunt uw tijdelijke reisverzekering direct of via een tussenpersoon afsluiten. De meest gebruikte manieren zijn: naar een kantoor gaan; telefonisch; Internet met de computer; Internet met de mobiele telefoon; schriftelijk. Wilt u aangeven wat uw voorkeur heeft.Welke als twee. En dan. En dan. <EERSTE VOORKEUR CIJFER 1, DAN 2, DE MINST POPULAIRE KRIJGT DUS CIJFER 5 ; EENZELFDE SCORE IS TOEGESTAAN>

	Rang-orde
naar een kantoor gaan (face-to-face)	
telefonisch	
Internet met de computer	
Internet met de mobiele telefoon	
schriftelijk	

6.Nu noem ik u bij elke manier waarmee u een tijdelijke reisverzekering kunt afsluiten weer de aspecten. Nu is de bedoeling per manier aan te geven in welke mate u dat vindt passen. Ook nu werken we weer met cijfers van 1 tot 7. Nu betekent een 1 dat u vindt dat dit kenmerk in zeer lage mate past bij de manier; een 7 betekent dat u vindt dat dit kenmerk in zeer hoge mate past bij de manier. <KENMERKEN PER KANAAL AFWERKEN>.

	face-to-face	telefo-nisch	internet computer	internet mobiel	schrif-telijk
Ik word goed geïnformeerd					
Ik kan de juiste keuzes maken					
Ik kan eenvoudig zaken afhandelen					

Ik hoef zo min mogelijk tijd te besteden					
Ik kan het doen wanneer ik het wil					
Ik kan gemakkelijk communiceren					
Ik heb controle					
Ik heb een veilig gevoel over mijn persoonlijke gegevens					

7. Speciaal voor dit onderzoek is een Internet pagina ontwikkeld, waarmee u via Internet op uw mobiele telefoon een tijdelijke reisverzekering kunt afsluiten. Dit is slechts voor onderzoeksdoeleinden. Er wordt dus geen echte aanvraag verstuurd. In welke mate maakt u gebruik van toepassingen via Internet op de mobiele telefoon (zoals mobiel bankieren, reserveren van hotels via Internet op uw mobiele telefoon en andere soortgelijke toepassingen)?

nooit	
zelden (minder dan 6 keer per jaar)	
af en toe (een keer in de twee maanden, een keer in de maand)	
regelmatig (wekelijks, bijna wekelijks)	
heel vaak (meer dan een keer in de week)	

8.<OVERHANDIG TELEFOON>. Wilt u nu de site WWW.MOBIELBVERZEKERD.NET bezoeken. Kies: tijdelijke reisverzekering afsluiten en ga nu gewoon uw gang. Als u wilt mag u ook een andere naam, adres en dergelijke invullen.

Is het u gelukt een tijdelijke reisverzekering met de mobiele telefoon af te sluiten?

ja	
nee	

9. <INTERVIEWER: NOTEER TIJD DIE RESPONDENT NODIG HAD OM VERZEKERING AF TE SLUITEN>

minder dan 1 minuut	
1 minuut tot 2 minuten	
2 tot 3 minuten	
3 tot 4 minuten	
4 tot 5 minuten	
5 minuten en meer	

9. U heeft nu ervaring opgedaan met het afsluiten. Hoe tevreden bent u met het afsluiten van een reisverzekering via Internet op de mobiele telefoon. Ook nu weer een zeven punt schaal; 1 staat voor zeer ontevreden; 7 staat voor zeer tevreden.

cijfer tevredenheid	

10. U had waarschijnlijk bepaalde verwachtingen over het afsluiten van een reisverzekering via de mobiele telefoon. Kunt u aangeven in welke mate de dienst aan uw verwachtingen heeft voldaan. Ik noem u weer de

kenmerken en u kunt weer kiezen met een cijfer van 1 tot 7. Een 1 betekent veel slechter dan verwacht; 7 is veel beter dan verwacht.

	veel slechter dan verwacht			slechter noch beter dan verwacht		veel beter dan verwacht	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Ik word goed geïnformeerd							
Ik kan de juiste keuzes maken							
Ik kan eenvoudig zaken afhandelen							
Ik hoef zo min mogelijk tijd te besteden							
Ik kan het doen wanneer ik het wil							
Ik kan gemakkelijk communiceren							
Ik heb controle							
Ik heb een veilig gevoel over mijn persoonlijke gegevens							

1. Ik lees u de verschillende aspecten weer voor. Kunt u weer met een cijfer van 1 tot 7 aangeven in hoeverre dat voor u van belang is. U kunt weer antwoorden met een cijfer van 1 tot 7. Ik noem u nu de aspecten.

	zeer onbelangrijk			onbelangrijk noch belangrijk		zeer belangrijk	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Ik word goed geïnformeerd							
Ik kan de juiste keuzes maken							
Ik kan eenvoudig zaken afhandelen							
Ik hoef zo min mogelijk tijd te besteden							
Ik kan het doen wanneer ik het wil							
Ik kan gemakkelijk communiceren							
Ik heb controle							
Ik heb een veilig gevoel over mijn persoonlijke gegevens							

12. U heeft een aantal aspecten dezelfde score gegeven. Wilt u deze eens in volgorde van belangrijkheid zetten. De belangrijkste eerst.... <ZIE INSTRUCTIE VRAAG 4>

	Rang-nummer
Ik word goed geïnformeerd	

Ik kan de juiste keuzes maken	
Ik kan eenvoudig zaken afhandelen	
Ik hoef zo min mogelijk tijd te besteden	
Ik kan het doen wanneer ik het wil	
Ik kan gemakkelijk communiceren	
Ik heb controle	
Ik heb een veilig gevoel over mijn persoonlijke gegevens	

13. Wilt u weer aangeven welke manier uw voorkeur heeft.Welke als twee. En dan. En dan.
<MANIEREN WEER EVENTUEEL NOEMEN; VOORKEUR CIJFER 1, DAN 2, DE MINST POPULAIRE KRIJGT DUS CIJFER 5>

	Rang-orde
naar een kantoor gaan (face-to-face)	
telefonisch	
Internet met de computer	
Internet met de mobiele telefoon	
schriftelijk	

14. Dan tot slot nog een paar vragen voor de statistiek. Wat is uw hoogst genoten opleiding?

basis onderwijs, LBO, Mavo	
Havo, Vwo, MBO	
hoger beroepsonderwijs/ academisch onderwijs	

16. Mag ik ook uw leeftijd weten. Ik noem u de mogelijkheden:

jonger dan 25 jaar	
25 tot 35 jaar	
35 tot 45 jaar	
45 tot 55 jaar	
55 tot 65 jaar	
65 jaar en ouder	

17. <NOTEER GESLACHT ZONDER TE VRAGEN>

man	
vrouw	

18. <NOTEER URBANISATIEGRAAD>

minder dan 20.000 inwoners	
20.000 tot 100.000 inwoners	
100.000 en meer inwoners	

Hartelijk dank voor uw medewerking!

Research question

Most organizations have innovated their distribution strategy and adopted a multi channel strategy. The success of this strategy depends to a large extent on the adoption of new channels by the consumer. This research aims to build a model that explains consumer multichannel behavior. It gives answers to the question which factors influence the use of a new ICT enabled channel. The central question in this thesis is:

- *What factors explain consumer channel choice in an ICT enabled multichannel configuration, therewith finding an explanation for the trial, adoption and choice of a new channel?*

This main question leads to three sub questions that will be answered in this thesis:

- *Which theories can be used to find the factors that explain the trial, adoption and choice of an ICT enabled channel by customers in a multichannel configuration?*
- *Is it possible to arrive at a model based on these theories that explains the use of ICT enabled channels?*
- *Can this model can be confirmed empirically?*

The purpose of this thesis is to extend the level of the research towards general insight regarding the use of a (new) ICT enabled channel instead of researching every newly introduced channel apart, as if it is the first time an innovation is introduced. It should be possible to explain the use of the Internet, the use of Mobile Internet and the use of the channel that will be introduced in the next decennium within the same context. The aim of this thesis is to increase the insight in multichannel behavior by researching the way in which consumers choose between channels.

Through improving understanding of multichannel customer behavior the aim is to contribute to effective diffusion of channel configuration innovation by effective channel migration strategies. The results of this study are of relevance for organizations that have (or plan to have) multi channels to reach their customers. With the results of this study they gain further insight in the decision making process of their customers regarding the choice of the channel. Understanding how and why customers accept a channel will help to improve their channel management strategy. Channel management has received much attention since the introduction of the Internet, judging by the considerable amount of studies that have been published, but still the knowledge level of channel choice has been labeled relatively low.

The academic relevance of this study for the IS field is threefold. First this thesis provides insight in the relevant theories for explaining technology acceptance from a number of academic fields and combines results from social psychology research, IS research, behavior decision making research and marketing research to arrive at a model for explaining consumer behavior. Secondly the individual technology adoption research is expanded with insight in how and why consumers choose across different channels. As will become clear, IS research on technology adoption has focused on explaining trial and adoption, but explaining how consumers choose between alternative technologies is still lacking in the IS literature. This thesis leads to the addition of new constructs and it may lead to insight how consumers choose between competing alternatives. Thirdly the thesis will add a methodological approach to the IS field. In building the model step by step several research methods are used, that have (hardly) been applied in IS research, but have relevance for this academic field.

The research is restricted to consumer behavior and the explanation of this behavior is restricted to the transaction stage. The transaction stage is limited to the purchase of services. The thesis consists of three parts: literature review, building the model and testing the model.

Literature review

The first part of the thesis addresses the first part of the research question: which theories can be used to explain multichannel behavior. The approach followed is the use of the large amount of literature on the use of Internet and eCommerce, that has appeared in the academic journals since 1995. The theories used in this research are evaluated on their relevance for multichannel behavior in an ICT context. The elements that have to be explained are trial, adoption (continuous use) and the choice between channels. The theories are from several academic fields. The review leads to the conclusion that the Technology Acceptance Model (TAM) and the Expectation Disconfirmation Theory (EDT) are most suitable for explaining trial and adoption of an ICT enabled channel. TAM and EDT explain on an abstract level why a new channel is tried and adopted; the theories provide no insight in the consumer decision making process. The next step is expanding the reviewed theories with other relevant academic fields. The most relevant academic disciplines studying consumer decision making are psychology, economics and marketing. Based on the analysis of the theories in the three academic fields the adequacy importance model has been chosen to explain the choice between several channels. This model can be illustrated as follows. Assume a consumer makes a choice between three channels. These channels are, according to the adequacy importance model, compared on their characteristics (attributes) that are important for this choice. The channel that scores highest is the most preferred channel. The scores are not only based on the scores the channels get per attribute, but also on the importance scores of these attributes. The consumer scores the channels on the attributes and multiplies these scores with the importance scores, as can be seen in table 1.

Attribute	Importance score	Channel 1	Channel 2	Channel 3
risk	2	2	3	1
advice	1	2	3	1
speed	3	3	1	1
Total score		15	12	6

Table 1 The adequacy importance model

Building the model

Based on the literature review the model has been built. The building of the model can be summarized in three steps as follows. First TAM is the start of the model. The Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) of the new channel explain the behavioral intention. The preferences are, conform TAM, based on the PU and PEOU per channel. The higher the PU and PEOU of a channel, the higher the preference for this channel. The preferred channel is the channel with the highest intention to use.
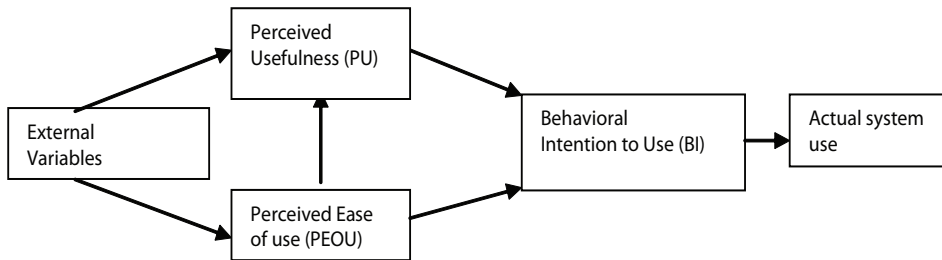
Figure 1 The basic TAM

The second step is that consumers have to decide how to evaluate the alternatives. In this way the logic and constructs of TAM have been combined with the consideration set and multi attribute models of the marketing literature.
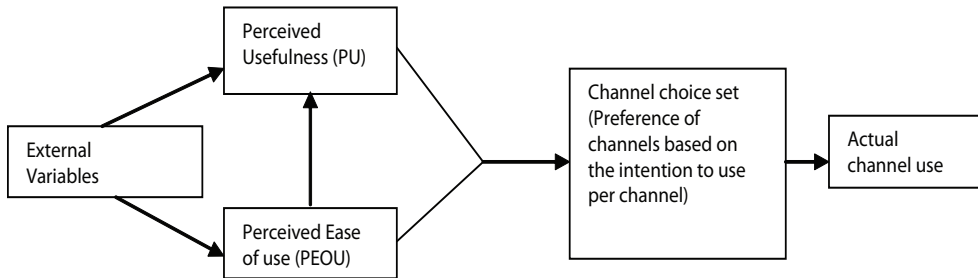

Figure 2 TAM and preferences based on the channel choice set

The preferences are conform TAM and based on the PU and PEOU scores per channel. The higher a channel scores on these attributes, the higher the preference for this channel. The third step is explaining the dynamics of the channel choice set, which is the main focus of the model. This is done by the actual use of a channel and here EDT is integrated into the model. EDT can be seen as a two-stage model, where the expectation and attitude after the use of the channel is caused by the expectation and attitude in the initial stage and the disconfirmation and satisfaction after use.

The use of a channel will depend on the intention to use this channel, conform the TAM. However, as the choice is between the use of several channels, the behavioral intention has been expanded to the channel choice set, in which for every channel an intention is formed, leading to preferences for the channels, according to the definition of preferences as "attitudes toward one object in relation to another" (Blackwell et al., 2001; p. 289). The actual use of a channel will result in the evaluation of the performance of the channel according to the EDT, where the performance of a channel is evaluated especially on those attributes on which the channel was chosen. This leads to (possible) new scores for a channel on the attributes. This will result in (in line with TAM) new Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) scores that might lead to a change in attitude towards the channel, resulting in a change in the positions in the channel choice set. It might influence

the weighting factors of the channels which is conform the adequacy importance model and has also been demonstrated in TAM research. In this way TAM has been expanded to the multichannel environment with the use of concepts from the behavioral economics and marketing fields.
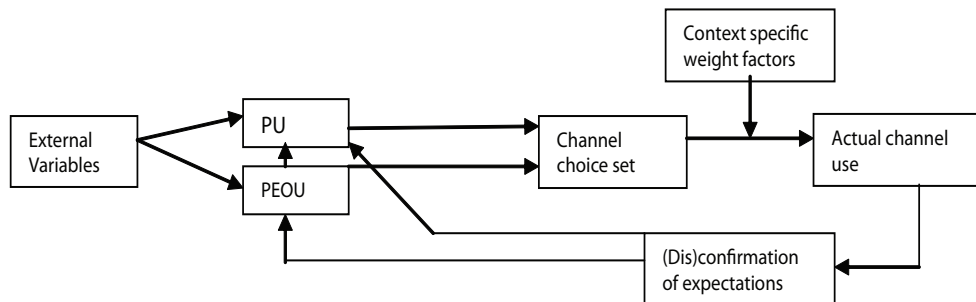

Figure 3 The multichannel model

The model can be explained with an example. Let us assume a consumer wants to buy (for the first time in her life) a life insurance. Her channel set is caused by her experience with channels in former service settings or as a result of external factors like social influence of her family or marketing campaigns. Her channel set might consist of for instance three channels: telephone, Internet, branch office. She might use the Internet to gather information and might go to a branch office for closing the contract. After evaluation of her experience, her (presumably quite subconscious) expectations will be confirmed or disconfirmed. This will have impact on the preferences of the three channels within the channel set, which will determine the channel choice during the next purchase of an insurance.

The model is translated into a questionnaire that can be used in a pilot study. The first step is to define the attributes as they have a central role in the model. The TAM constructs PU and PEOU are less suitable as attributes to explain the use of an ICT enabled channel in a consumer behavior context than was expected. These constructs have been developed for using or not using an IS in a working environment. In the literature there is however no consensus on the most important attributes in multichannel research and it becomes clear that the mentioned attributes in the literature are measured on different levels. Although in numerous Internet related studies the attributes are based on existing research, this approach is not followed in this study. The attributes are defined by qualitative research, using the laddering method. This means a deviation from the original idea behind TAM: defining the relevant attributes for once and for all. Based on the laddering interviews eight attributes are selected and are used in a pilot study:

1. Information quality (well informed)
2. Quality of the decision making (making the right choice; more certainty)
3. Quality of process (less mistakes)
4. Efficiency (saving time; faster acting)
5. Availability (flexible/whenever I want)
6. Ease of communication (easier communication)
7. Control (knowing the state of affairs; control)
8. Privacy (misuse personal information; privacy)

These attributes have been translated into a questionnaire that has been tested in a pilot survey. Based on the results of this survey a (limited) number of adjustments has been made. Now it possible to answer the third question: can this model be verified empirically?

The results

As has been mentioned the main topic of this thesis is the purchase of services. The concept of services is too broad and therefore in the laddering interviews financial services have been used to generate the relevant attributes. Given the fact, that there are several financial services that differ from each other on a number of criteria (cf. Black et al., 2002; Durkin et al., 2008; Cortinas et al., 2010), it is necessary that the field research should focus on one specific service. As a subject for this research the buying of travel insurance has been chosen.

The interviews have been conducted face-to-face. In total the fieldwork has resulted in 296 usable interviews. The questionnaire follows the usual sequence in this kind of research: importance of the attributes, channel preference, evaluation of channels per attribute. After these steps respondents are asked to use the mobile phone to simulate the buying of travel insurance via the mobile Internet. On this site respondents pretend they are buying travel insurance with their mobile phone. Illustration 1 shows some screenshots.
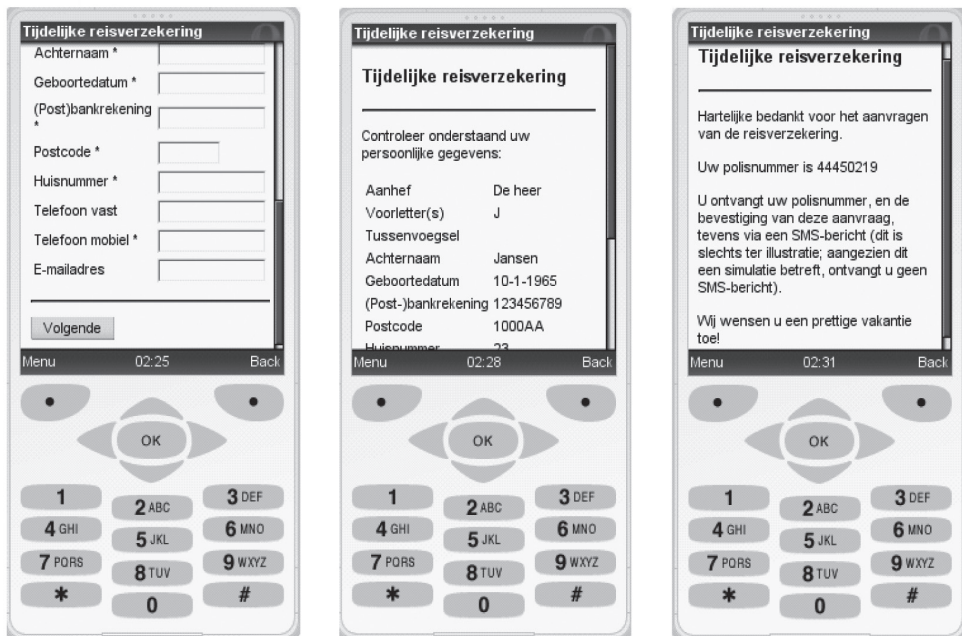
Illustration1 Screenshots: the purchase of travel insurance

The second part of the interview evaluates the satisfaction with the used channel, based on scoring the previous mentioned attributes. Next the channel preference is asked, which can be seen as one of the key questions, because this answers the question whether the channel choice set changes because of the (unexpected) use of a channel. Followed by another crucial set of questions: the importance of the attributes to provide information about the dynamic character of multichannel behavior.

The general results make clear that the basic assumptions on which the model is based are met: the importance scores of the attributes show that the for this research chosen attributes are important, respondents have a preference ranking for channels and therewith have a channel choice set and

respondents are able to evaluate the channels on the attributes. The Internet is the most popular channel. Conducting the experiment with the mobile Internet channel leads to a satisfaction score of 4.75 (on a scale from 1, very bad, to 7, very good) and two third of the respondents evaluates the channel as better than expected. An analysis based on the (according to the literature) relevant background variables shows some interesting differences between different groups:

- In evaluating channels women are more outcome oriented; men are more convenience oriented.
- The evaluation of the channels shows that men are more positive about the Internet; women more positive about the mobile Internet.
- Although for all groups the Internet is the most popular channel, the face-to-face channel is most popular among the lowest educated, the telephone among the highest educated.
- The middle educated score highest on the satisfaction scores with the experiment; the highest educated score lowest. The higher educated might be more critical in general or they might be more critical because they have more experience with buying travel insurance.

The model is only partly confirmed. The adequacy importance predicts the choice correctly in more than 40% of the cases; the first choice is predicted in 2/3 of the cases. The Expectation Disconfirmation Theory is confirmed. A more positive or negative experience with the use of the mobile Internet leads to a change in the channel preference choice set, in the expected direction; a neutral experience results in no changes in preferences. These results confirm the Expectation Disconfirmation Theory. However, the dynamics that lead to a different preference has not become clear from the experiment. This is caused by the failure of the decision making model. Another unclarified issue is the importance of the external variable experience with the mobile Internet.

It cannot be concluded from the results what decision making model is valid. This implies that other decision making strategies have to be evaluated. A number of alternative explanations for the findings has been discussed. The used methodology, face-to-face interviewing, is not an explanation: an online conducted research shows the same results. The same applies for another alternative explanation: respondents change their attitudes because of the fact that they are asked the same questions twice. The control group – that has not conducted the mobile Internet experiment - shows no significant changes, therewith indicating that the changes in the ranking of the channels are caused by the experiment. This means that alternative explanations for the findings have to be found. These alternatives are based on the consumer decision making process. An analysis of the results shows that the Elimination By Aspects (EBA) strategy is the most likely used strategy. Using this strategy means that the channels are first evaluated on the most important attribute, but in this strategy a cutoff is used (alternatives must meet the cutoffs). If two alternatives meet the cutoff on the most important attribute, they are evaluated on the second most important attribute and it is decided which channels meet the cutoffs. This continues until only one channel remains. This strategy explains the dynamics of the multichannel behavior as has been found in the survey. The results show that for 75% of the respondents this strategy might be applicable. An alternative explanation for the results is the attraction effect. This effect can be explained as follows. In figure 6 there is a situation in which channels A and B are compared. Channel A scores better on attribute 1; channel B scores better on attribute 2. A certain percentage of the consumers will have a preference for channel A and a certain percentage will have a preference for channel B.
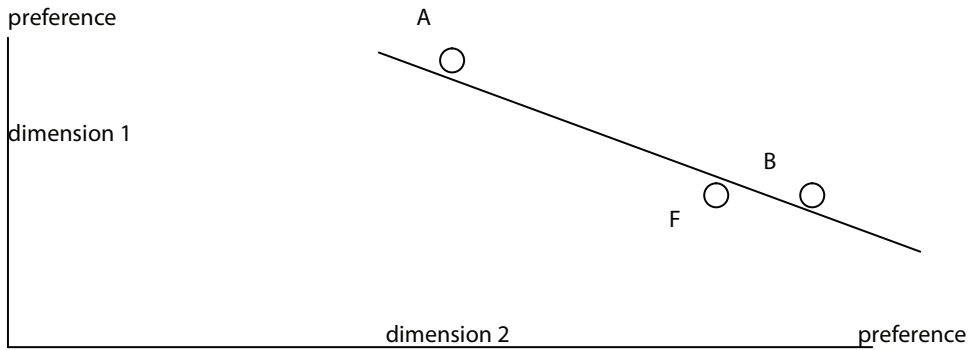
Figure 4 Channel choice and the attraction effect

Now a new channel, F, is introduced. This channel scores, like channel B, better on attribute 2 than channel A and worse, again like B, on attribute B. It scores worse than channel B on both attributes. When choosing among these three channels, F will hardly be chosen (B is the better option), but the shares of channel A and channel B will change. The attraction effect assumes that channel B will win market share. An analysis of the scores of the channels on the most important attributes before and after the experiment shows that the attraction effect is also a possible explanation for the channel preference.

Conclusion

Parts of the developed model have been confirmed in the survey. The Expectation Disconfirmation Theory explains the process of the change in attitude before and after the experiment. Respondents with a negative experience react differently (and according to the theory) than respondents with a neutral experience, who on their turn react differently than the respondents with a positive experience. The way this attitude change occurs is not clear, because the decision making theory included in the model has not been confirmed. The adequacy importance model (either the simple or the weighted additive) cannot provide the necessary insight in how the attitude change occurs. The research has made it clear that consumers use different decision making strategies. A combination of the Elimination By Aspects and the attraction effect seems the best possible explanation. Respondents probably have only two channels they use regularly. These channels are chosen on their scores on the two or three most important attributes conform the EBA strategy. As a new channel is introduced, as happened with the experiment, the importance scores change. This results in a change in the most important attributes and therewith new positions for the channels on these now most importance attributes.

Onderzoekvraag

Een groot aantal organisaties heeft haar distributie strategie vernieuwd en heeft gekozen voor een multichannel strategie, waarbij klanten benaderd worden via een aantal kanalen, zoals de telefoon, de winkel en het Internet. Het succes van de multichannel strategie wordt voor een groot deel bepaald door het proberen en accepteren (blijvend gebruik) van de nieuwe kanalen door de consument. Recente voorbeelden zijn Internet en mobiel Internet; in het algemeen zijn de innovaties gerelateerd aan het gebruik van ICT. Deze thesis heeft als doel een model te bouwen dat het multichannel gedrag van consumenten verklaart. De centrale onderzoekvraag is:

> • *Welke factoren verklaren de kanaalkeuze van de consument in een kanaalkeuze set met door ICT mogelijk gemaakte kanalen, waardoor een verklaring gevonden kan worden voor het proberen, accepteren en kiezen van een nieuw kanaal.*

De hoofdvraag leidt tot drie deelvragen die beantwoord worden:

> • *Welke theorieën kunnen gebruikt worden om de factoren te vinden die het proberen, accepteren en kiezen van een nieuw kanaal verklaren?*
> • *Is het mogelijk op basis van deze theorieën tot een model te komen dat het gebruik van kanalen verklaart?*
> • *Is het mogelijk dit model empirisch te verifiëren?*

Het doel van deze thesis is om het inzicht in het gebruik van nieuwe kanalen naar een hoger niveau te tillen. Het moet mogelijk zijn om tot een algemeen inzicht in het gebruik van kanalen te komen, zodat niet bij elke innovatie het wiel opnieuw moet worden uitgevonden. Het moet mogelijk zijn om het gebruik van Internet, het gebruik van mobiel Internet en het gebruik van het kanaal dat in 2020 wordt geïntroduceerd te verklaren met hetzelfde model.

Door het verbeteren van het begrip van multichannel consumenten gedrag levert deze thesis een bijdrage aan de kanaal migratie strategieën van organisaties. De resultaten zijn van belang voor organisaties die beschikken over (of van plan zijn te beschikken over) diverse kanalen om hun diensten aan hun klanten aan te bieden. Met deze resultaten kunnen zij meer inzicht krijgen in de wijze waarop hun klanten kiezen tussen de verschillende kanalen en op die wijze hun kanaalstrategie verbeteren. Hoewel er sinds de komst van het (commerciële) Internet veel gepubliceerd is over kanaalstrategieën, is er nog steeds relatief weinig kennis over kanaal keuze.

De academische relevantie van deze thesis bestaat uit drie delen. In de eerste plaats geeft deze thesis inzicht in de relevante theorieën uit een aantal academische gebieden om technologie acceptatie te verklaren. Het combineert de inzichten van onderzoek uit de academische disciplines Informatiekunde, sociale psychologie, economie en marketing. In de tweede plaats wordt dit technologie acceptatie onderzoek uitgebreid met inzicht in hoe en waarom consumenten kiezen tussen verschillende kanalen en daarmee tussen verschillende technologieën. Zoals duidelijk zal worden, is onderzoek vanuit het vakgebied Informatiekunde vooral gericht op het verklaren van het proberen en blijvend gebruiken (acceptatie) van informatietechnologie. Een verklaring voor de keuze tussen technologieën ontbreekt vooralsnog. Een derde bijdrage bestaat uit de methodologische aanpak in deze thesis. Om tot een model te komen is een aantal onderzoekmethoden gebruikt, dat niet of nauwelijks in het Informatiekunde vakgebied gebruikt wordt, maar wel degelijk relevantie heeft voor dit vakgebied.

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75 Bij de vertaling van de Engelstalige begrippen is gebruik gemaakt van Verstegen, 2009.

Het onderzoek is beperkt tot consumenten gedrag en de verklaring van dit gedrag is beperkt tot de aankoopfase van diensten. De thesis bestaat uit drie delen: literatuuronderzoek, het formuleren van het model en het toetsen van dit model. In deze samenvatting zullen de belangrijkste uitkomsten per onderdeel besproken worden.

Literatuuronderzoek

Het eerste deel van de thesis behandelt de vraag welke theorieën geschikt zijn om multichannel gedrag te verklaren. Om deze theorieën te vinden is gebruik gemaakt van de grote hoeveelheid studies die zijn verschenen sinds de komst van het (commerciële) Internet. De gedachte hierachter is dat dit het meest recente door ICT mogelijk gemaakte kanaal is en dat de theorieën die gebruikt zijn om dit gedrag te verklaren hun waarde zullen hebben voor het verklaren van de kanaalkeuze in het algemeen. De literatuur over eCommmerce en online winkelen is als uitgangspunt genomen. De theorieën moeten de drie elementen bij kanaalkeuze, namelijk het proberen, het accepteren (blijvend gebruiken) en kiezen van een kanaal, kunnen verklaren.

Het literatuuronderzoek leidt tot de conclusie dat het Technnology Acceptance Model (TAM)[76] en de Expectation Disconfirmation Theory (EDT) het meest geschikt zijn om het proberen en het accepteren van een kanaal te verklaren. Echter: de twee theorieën schieten tekort bij het verklaren van de daadwerkelijke keuze tussen kanalen. Gegeven het feit dat deze verklaring evenmin gevonden kan worden in de overige besproken theorieën, is het literatuuronderzoek uitgebreid met theorieën uit andere vakgebieden die gerelateerd zijn aan de wijze waarop consumenten beslissen. Deze zogenaamde consumer decision making theorieën worden gevonden in de psychologie, economie en marketing. Op basis van deze analyse is het adequacy importance model gekozen om de keuze tussen kanalen te verklaren. Dit model kan als volgt geïllustreerd worden. Stel dat een consument een keuze maakt uit drie kanalen. Deze kanalen worden dan, volgens het adequacy importance model, vergeleken op basis van de eigenschappen (attributen) die van belang zijn bij deze keuze. Het kanaal dat het hoogst scoort, heeft de voorkeur. Bij het bepalen van de score worden de kanalen niet alleen vergeleken op de attributen, maar krijgen de attributen ook een bepaalde belangrijkheid score. De consument scoort de kanalen vervolgens op de attributen en vermenigvuldigt deze scores met de belangrijkheid, zoals in tabel 1 cijfermatig is weergegeven.

| Attribuut	Belangrijkheid score	Kanaal 1	Kanaal 2	Kanaal 3
risico	2	2	3	1
advies	1	2	3	1
snelheid	3	3	1	1
Totaal score		15	12	6

Tabel 1 Het adequacy importance model

De bouw van het model

Op basis van de literatuurstudie is het model geformuleerd, dat in drie stappen samengevat kan worden. De eerste stap bestaat uit het gebruik van TAM, dat stelt dat de Perceived Usefulness (PU)

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76 De namen van de theorieën en een aantal begrippen zijn niet vertaald. Op deze wijze is het mogelijk vanuit de Nederlandse tekst de koppeling met de (veelal Engelstalige) literatuur te maken.

en Peceived Ease of Use (PEOU) van een kanaal bepalen in hoeverre consumenten overwegen dit kanaal te gebruiken. PU en PEOU leiden tot een intentie om het kanaal te gebruiken voor alle mogelijke kanalen (zie figuur 1). De intentie om het kanaal te gebruiken kan gezien worden als een voorkeur voor het kanaal: hoe hoger de intentie om het te gebruiken, hoe hoger de voorkeur voor het kanaal. Op deze wijze is TAM gecombineerd met het adequacy importance model, waarbij de attributen dus gevormd worden door Perceived Usefulness en Perceived Ease of Use.
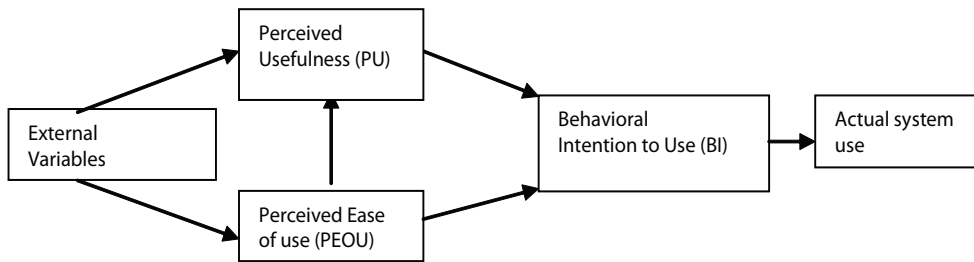
Figuur 1 Het basis Technology Acceptance Model

Op deze wijze wordt het basis model omgezet in een kanaalkeuze model:
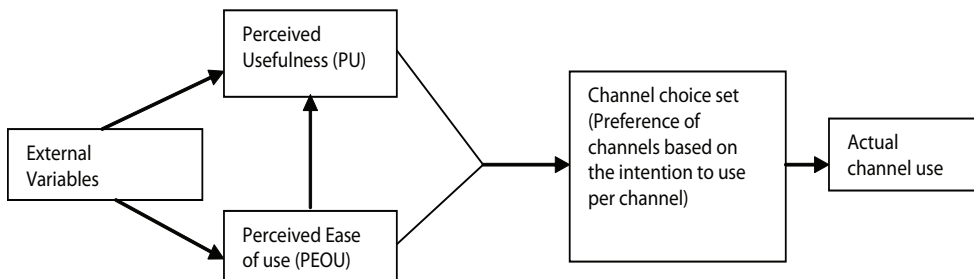
Figuur 2 TAM en voorkeuren gebaseerd op de kanaalkeuze set

De voorkeuren zijn, conform TAM, gebaseerd op de PU en PEOU per kanaal. Hoe hoger een kanaal scoort op PU en PEOU, hoe hoger de voorkeur voor dit kanaal. Het favoriete kanaal is het kanaal waarvan de intentie om het te gebruiken het hoogst is. Een derde stap is het daadwerkelijke gebruik van het kanaal te integreren in dit model. Hier wordt EDT in het model opgenomen. EDT stelt dat consumenten op basis van hun daadwerkelijke ervaring (in dit model actual channel use) komen tot een bevestiging of ontkenning van hun verwachtingen (in dit model <dis>confirmation of expectations). Deze bevestiging of ontkenning van hun verwachtingen leidt tot een aanpassing van hun oordeel over het gebruikte kanaal en daarmee tot een aanpassing van hun kanalen voorkeurset. Dit kan op twee manieren: of men scoort het kanaal lager of hoger op de attributen (in dit model PU en PEOU) of men hecht een groter of kleiner belang aan de belangrijkheid van de attributen.
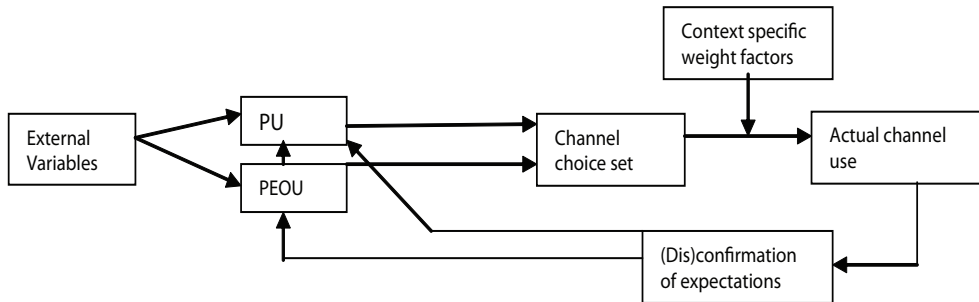
Figuur 3 Het multichannel model

Het model laat zich als volgt uitleggen. Het gebruik van een kanaal zal afhangen van de intentie om dit kanaal te gebruiken, conform TAM. Echter: er is een keuze tussen verschillende kanalen, hetgeen betekent dat er voor ieder mogelijk kanaal een intentie om te gebruiken zal zijn. Dit leidt tot een voorkeur voor de verschillende kanalen. Het daadwerkelijke gebruik van het kanaal zal leiden tot een evaluatie van de prestatie van het kanaal conform EDT. Dit leidt ertoe dat het gebruikte kanaal nieuwe scores krijgt voor PU en PEOU en dat kan er toe leiden dat de voorkeuren voor de kanalen na het gebruik wijzigen. Stel een consument wil voor het eerst in haar leven een levensverzekering kopen. De kanaalkeuze set bestaat, op basis van eerdere ervaringen, uit de telefoon, Internet en het kantoor van de tussenpersoon. De consument gebruikt wellicht het Internet om informatie te verzamelen en gaat naar het kantoor om de verzekering af te sluiten. Na afloop zullen de verwachtingen bevestigd of niet bevestigd worden, hetgeen invloed zal hebben op de voorkeuren voor de drie kanalen. De volgende keer dat er een verzekering gekocht moet worden, heeft het kantoor wellicht niet meer de voorkeur.

Het model is vertaald in een vragenlijst die is gebruikt in een pilot onderzoek. De eerste stap is het definiëren van de attributen PU en PEOU, aangezien die een centrale rol in het model spelen. De TAM begrippen PU en PEOU blijken minder geschikt te zijn voor het gebruik in consumenten onderzoek dan vooraf werd aangenomen. Dit betekent dat de attributen van het kanaal, op basis waarvan de consument zijn/haar voorkeur bepaalt, opnieuw gedefinieerd moeten worden. Aangezien de literatuur een te diffuus beeld geeft, is er kwalitatief onderzoek verricht om de voor de consument belangrijke attributen te genereren. Zoals reeds vermeld is de focus van deze thesis op het kopen van diensten. Het concept diensten is evenwel te breed en daarom is het kwalitatieve vooronderzoek beperkt tot financiële dienstverlening. Respondenten moesten aangeven welke eigenschappen (attributen) van kanalen belangrijk zijn bij het gebruik van financiële diensten. Dit onderzoek heeft geleid tot acht belangrijke attributen:

- kwaliteit van de informatie;
- kwaliteit van de beslissing
- kwaliteit van het proces;
- efficiency;
- beschikbaarheid;
- eenvoud van communicatie;
- controle;
- privacy.

Deze attributen zijn vertaald in een vragenlijst in het pilot onderzoek. Op basis van de uitkomsten van dit pilot onderzoek is een (beperkt) aantal wijzigingen aangebracht. Nu het model geformuleerd

is, kan de derde onderzoekvraag beantwoord worden: is het mogelijk het model empirisch te bevestigen.

De resultaten

Daar het concept financiële diensten eveneens te breed is, is dit in het veldwerk verder beperkt tot het kopen van een reisverzekering. Totaal zijn 296 bruikbare vragenlijsten gegeneerd. De interviews hebben face-fo-face plaatsgevonden. De vragenlijst is opgebouwd volgens het, bij dit onderzoek, vaste stramien: belangrijkheid van de attributen, kanaalvoorkeur, score van de kanalen per attribuut. Vervolgens werd de respondenten gevraagd de mobiele telefoon van de interviewer te gebruiken en moesten zij de aanschaf van een reisverzekering via de mobiele telefoon nabootsen (zie illustratie 1).
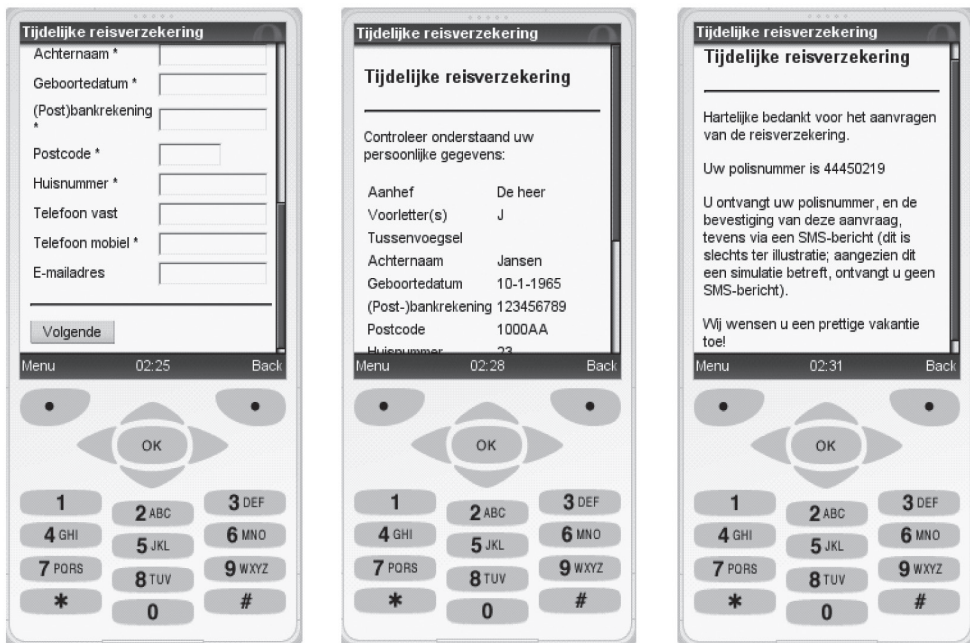
Illustratie 1 Screenshots: de aanschaf van een reisverzekering

In het tweede deel van het vraaggesprek evalueren de respondenten de tevredenheid met het gebruikte kanaal (mobiel Internet) en wordt opnieuw naar de kanaal voorkeur en de belangrijkheid van de attributen gevraagd. Dit zijn de wezenlijke vragen, omdat hier het dynamische karakter van multichannel gedrag naar voren komt.

De resultaten maken duidelijk dat de veronderstellingen waarop het model is gebaseerd empirisch bevestigd worden. De belangrijkheid scores van de attributen zijn hoog, respondenten hebben inderdaad een kanaal voorkeur en zijn in staat de kanalen naar voorkeur te rangschikken. Het Internet is het meest populaire kanaal. De tevredenheid met het mobiele Internet na het experiment is 4.75 op een schaal van 1 (heel slecht) tot 7 (heel goed); 2/3 van de respondenten beoordeelt dit kanaal als beter dan verwacht. Een analyse op basis van de socio demografische kenmerken brengt een aantal interessante verschillen per groep aan het licht:

- Vrouwen zijn bij de evaluatie van de kanalen meer uitkomst gericht; mannen zijn meer op gemak gericht.
- Mannen zijn relatief positiever over het Internet, vrouwen relatief positiever ten aanzien van mobiel Internet.
- Het face-to-face kanaal scoort relatief hoog bij de lager opgeleiden; het telefonische kanaal scoort relatief hoog bij de hoger opgeleiden.
- De middel hoog opgeleide groep is relatief positief over het mobiele Internet na het uitvoeren van het experiment; de hoger opgeleiden zijn het meest kritisch over dit kanaal.

Het model wordt slechts ten dele bevestigd. Het adequacy importance voorspelt in ongeveer 40% van de gevallen de juiste rangorde; bij 2/3 deel van de respondenten wordt de eerste keuze juist voorspeld. De Expectation Disconfirmation Theory wordt in het onderzoek bevestigd. Respondenten met een positieve ervaring (op basis van het experiment) met het mobiele Internet geven het kanaal een hogere score; respondenten met een negatieve ervaring geven het mobiele Internet kanaal een lagere score, terwijl de respondenten die neutraal zijn over het experiment hun kanaal voorkeuren niet veranderen.

Echter: respondenten veranderen weliswaar hun voorkeuren op basis van de tevredenheid of ontevredenheid met het mobiele Internet kanaal, maar het is niet duidelijk op basis van welke beslissingsstrategie. Er wordt geen bevestiging voor het adequacy importance model gevonden. Als de belangrijkheid scores niet mee genomen worden, verandert de kwaliteit van de voorspellingen niet, zowel in het voorspellen van de kanaalvoorkeur voor als na het experiment. Een nadere analyse van de resultaten maakt duidelijk dat een andere strategie, de Eliminiation By Aspects (EBA), door een aantal respondenten waarschijnlijk gebruikt wordt. Bij deze strategie vergelijken consumenten de kanalen met elkaar eerst op het belangrijkste attribuut. Alleen kanalen die aan een (door de consument) bepaalde waarde voldoen, 'overleven' deze selectie. Vervolgens worden de overgebleven kanalen vergeleken op het een na belangrijkste attribuut en vallen de kanalen af die niet voldoen aan de noodzakelijke waarde. Dit proces gaat door totdat er een kanaal overblijft. De resultaten laten zien dat bij 75% van de respondenten dit model van toepassing kan zijn. Daarnaast speelt bij de keuze van het kanaal vermoedelijk het zogenaamde "attraction effect" een belangrijke rol. Dit effect laat zich als volgt uitleggen. In figuur 4 is een situatie waarin twee kanalen A en B met elkaar vergeleken worden. Kanaal A scoort beter op attribuut 1; kanaal B scoort beter op attribuut 2. Een bepaald percentage zal een voorkeur voor kanaal A hebben; een bepaald percentage zal een voorkeur voor kanaal B hebben.
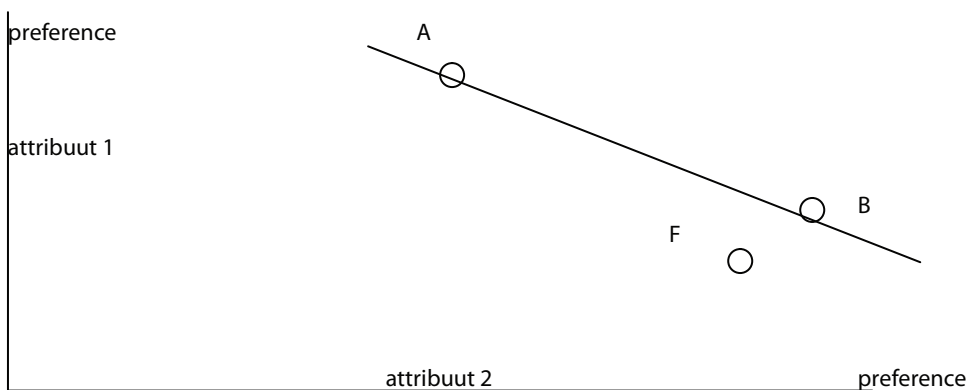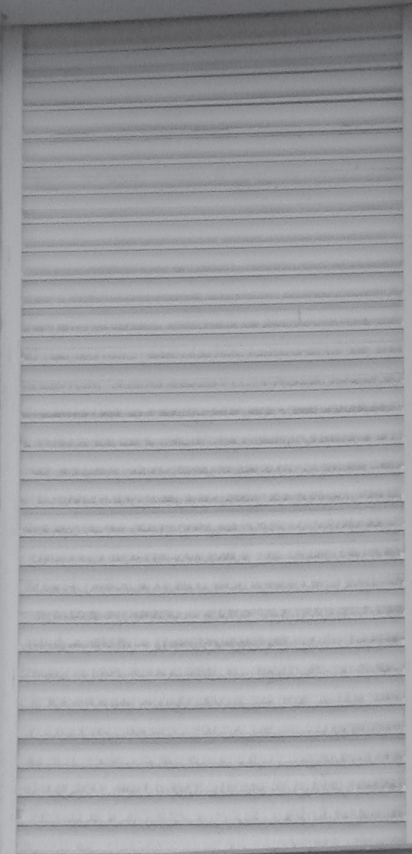

Figuur 4 Kanaal keuze en attraction effect

Nu doet zich de situatie voor waarbij er een nieuw kanaal komt, kanaal F. Dit kanaal scoort, net zoals kanaal B, beter op attribuut 2 dan kanaal A en slechter, net zoals kanaal B, op attribuut 1 dan kanaal A. Het scoort evenwel slechter dan kanaal B op beide attributen. Bij de keuze van de consumenten zal nu kanaal F nauwelijks gekozen worden (B is immers 'beter'), maar het zal de verhouding van de keuze voor kanaal A en kanaal B veranderen. Het attraction effect stelt dat het aandeel van kanaal B zal toenemen. Een analyse van de scores van de kanalen op de twee belangrijkste attributen voor en na het experiment maakt duidelijk dat het attraction effect een mogelijke verklaring voor de kanaalvoorkeur is.

Conclusie

Delen van het ontwikkelde model zijn bevestigd door het onderzoek. De Expectation Disconfirmation Theory verklaart het proces van de verandering in attitude voor en na het experiment. Respondenten met een negatieve ervaring reageren anders (en in overeenstemming met de theorie) dan respondenten met een neutrale dan wel positieve ervaring. De wijze waarop de voorkeuren veranderen is niet duidelijk, omdat het adequacy importance model geen inzicht geeft in de wijze waarop deze verandering plaatsvindt. Het onderzoek heeft duidelijk gemaakt dat consumenten diverse strategieën gebruiken. Een combinatie van Elimination By Aspects en het attraction effect lijkt de best mogelijke verklaring. Consumenten hebben vermoedelijk twee kanalen die zij regelmatig gebruiken en deze kanalen zijn gekozen op basis van hun score op de twee of drie belangrijkste attributen. Wanneer er een nieuw kanaal wordt geïntroduceerd (zoals door het experiment gebeurde), veranderen de belangrijkheidscores. Daarmee veranderen de belangrijkste attributen en daarmee de posities van de kanalen.

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