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Author(s)	W. van Osch
Faculty	FEB: Amsterdam Business School Research Institute (ABS-RI)
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English Summary

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Introduction

Analyzing generative group activities against the backdrop of an increasingly connected world, this study introduces the concept of “generative collectives” as a novel theoretical lens for describing why some Internet-based collectives are more generative than others. Generative collectives are *groups of people with shared interests or goals who mutually engage in rejuvenating, reconfiguring, reframing and revolutionizing acts*. Whereas any type of collective has the capacity to be generative, some collectives are more generative than others.

In order to understand why some collectives are more generative than others, this study introduces the concept of “collective generative capacity”, which is *the ability of a collective to engage in acts of rejuvenating, reconfiguring, reframing and revolutionizing within a particular goal-driven context*. Therefore, collective generative capacity is a trait of a collective, that is, a habitual pattern encompassing behavioral, cognitive and affective elements. Like any trait, collective generative capacity can be absent or present, weak or strong, and thereby affects the actual generative acts and outcomes of a collective.

In this study, I aim to answer the following research question:

What are the structural, cognitive and technological dimensions of Internet-based collectives that affect their generative capacity?

Answering this question and understanding the generative capacity of collectives is important, not only due to the growing proliferation of such collectives, but also because they shed light onto a set of structural, cognitive and technological dimensions of collectivity that influence grassroots creativity and innovation. Hence, theorizing these dimensions, as induced by Internet-based collectives, has important implications for understanding generativity in collectives and organizations in general.

Furthermore, understanding variations in the generative capacity of collectives can help us explain why some collectives are more generative than others. These insights can subsequently inform the design and development of information systems and

online environments that are conducive to processes of generativity. Therefore, the findings of this study will have important implications for understanding how to enhance generative capacity and evoke generative processes in collectives and organizations of all sorts.

Theory

In order to provide the theoretical underpinnings for conceptualizing and analyzing generative collectives and the related notion of collective generative capacity, this study is based on an extensive literature review of a set of foundational conceptualizations of collectivity and generativity from multiple social science disciplines. Based on this literature review, three dimensions of generative collectives were identified, namely structure, cognition and technology that increase the inherent degrees of freedom, hence, generative capacity of collectives.

Methods

In order to analyze, refine and test the theoretical framework underlying this study, a mixed method approach was adopted, combining both qualitative and quantitative methods—longitudinal multiple case study, Q-sorting analysis, Structural Equation Modeling of scenario-based surveys, and group experiments augmented with video analysis.

Findings

Jointly the findings from the longitudinal multiple case study, the Q-factor analysis, the Structural Equation Modeling and the group experiments show that *cognitive degrees of freedom* are at the heart of generative collectives, with higher levels of reflection, interaction and representation resulting in a higher capacity for generativity ($\beta = 0.384$; p-value < 0.001;) and explaining 31.7% of the variance in collective generative capacity. Furthermore, these cognitive degrees of freedom are enhanced by the ambidexterity of a collective's *structure* ($\beta = 0.678$; p-value < 0.001; explaining 41.8.% of the variance in cognitive degrees of freedom) and the *technological degrees of freedom* ($\beta = 0.2072$; p-value < 0.01; explaining 27% of the variance in cognitive degrees of freedom) of its platform. Hence, cognitive degrees of freedom mediate the relationship between a collective's structure and technology, on the one hand, and its generative capacity, on the other hand. Finally, *structural ambidexterity*, through a delicate balance of laterality and transience, also directly results in higher levels

of collective generative capacity ($\beta = 0.459$; $p\text{-value} < 0.001$) and explaining 32.8% of the variance in collective generative capacity.

Discussion

Whereas generative collectives are inhibited in restricted, regulated and highly organized environments for action and innovation, they thrive in ambidexterous structures using tailorable, open information systems that elicit distributed cognition and enable a fluid set of people from all walks of life to rejuvenate, reconfigure, reframe, and revolutionize collectively.

Based on these insights, this study provides several important contributions. First, by conceptualizing generative collectives, we provide a more general framework for analyzing, understanding, and modeling Internet-based group activities of all sorts occurring in a wide range of collectives. Second, by identifying three dimensions for juxtaposing generative collectives of all sorts, we provide a framework for predicting their levels of collective generative capacity. These insights are relevant to those who wish to study Internet-based generative collectives of all sorts as well as to those who engage in the design of technologies and systems that are conducive to collective generative capacity.

Given the proliferation of Internet-based generative acts, a thorough understanding of generative collectives and collective generative capacity can provide useful insights into many relevant, but as yet unknown, issues of group-based, bottom-up problem solving, innovation and change occurring through Internet-based platforms. Furthermore, theorizing collective generative capacity, as induced by Internet-based collectives, has important implications for understanding generativity in organizations in general.