

Individual's problem-solving style and firm-level entrepreneurial orientation on entrepreneurial decision-making

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Abstract

Traditional entrepreneurship theory posits that individual entrepreneurs take risks to make great gains, are agents of invention, and are quick to act when they discover new opportunities. Entrepreneurial orientation (EO) involves harnessing firm-level risk-taking, innovativeness and proactiveness behaviours, enacted by individuals, within companies used in the process of new creation. Effectuation theory places the focus on experimenting with as many strategies as possible to achieve multiple outcomes from these opportunities as part of a ‘bottom-up’ process to create as many strategic options as possible with the means at hand. However, most of the extant EO research embraces a ‘top-down’ causal approach, despite the intellectual origins of EO that link individual and entrepreneurial behaviour and organizational processes being effectual. As such, there are calls to apply the lens of effectuation to EO, which we will do in this research. Furthermore, this process of creating new businesses, products, markets, etc. relies on the entrepreneurial decision-making of individuals that influence the outcomes. So, an individual's problem-solving style is important. To incorporate these descriptor traits of the more adaptive and more innovative problem-solving styles of individuals, we use the Kirton Adaption-Innovation Inventory (KAI), which to the knowledge base of entrepreneurship is novel. Thus, in this multidisciplinary research, we combine concepts from psychology (KAI), EO and effectuation theory to address a gap in the EO literature that links entrepreneurial behaviour and individual and organizational processes.

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Introduction

Firms are said to have an entrepreneurial orientation (EO) when they support and manifest entrepreneurial behaviours with high frequency and intensity (Covin and Wales, 2019). Effective entrepreneurial decision-making plays an important role in the process of firm-level entrepreneurship that uses entrepreneurial behaviours and individual actions to create new businesses, products, ventures, markets, etc. (Wales, Covin and Monsen, 2020). However, the extant EO research has calcified around treating EO as a construct used to measure three (innovativeness, proactiveness, and risk-taking) or five (these plus autonomy and competitive aggressiveness) dimensions of firm-level entrepreneurship behaviours (Covin and Lumpkin, 2011). This focus has led to impeding our knowledge about the entrepreneurial processes that underpin these dimensions (Gartner, 1985; Randerson, 2016) and the link between entrepreneurial behaviour and the individual and organisational processes that lie at the heart of EO (Miller, 1983; Gartner, 1985; Randerson, 2016).

However, the approach used by entrepreneurial firm-level behaviours and processes has been framed as two different logics; causation and effectuation (Sarasvathy, 2001). Causation uses traditional goal-driven behaviours starting with the expected outcome and then selecting optimal strategies and means needed to achieve this (Dew, Read, *et al.*, 2009). Whereas, effectuation starts with the means available and aspirational outcomes and then focuses on experimenting with as many strategies as possible to achieve multiple outcomes (Sarasvathy, 2001). Causation is more applicable to competitive strategies in existing markets where decision-making is based on expected returns or acceptable risk, while effectuation is more representative of a company in the making and aspirational returns based on affordable loss. Surprisingly, most of the extant EO research embraces causation (Randerson, 2016), despite the intellectual origins of EO linking individual and entrepreneurial behaviour and organizational processes is effectual (Miller, 1983, 2011; Gartner, 1985). As such, there have been calls to apply a 'bottom-up' effectuation process lens to EO (Randerson, 2016). Particularly, because the dominant logic within the corporate context is mostly causal or 'top-down' (Dew, Read, *et al.*, 2009) that starts with the desired outcomes or expected returns and then assigns what is needed to achieve this according to an acceptable risk. However, 'new creation' in the entrepreneurial sense begins with the aspirational outcomes of the entrepreneur who then uses the means available to them (e.g., resources, own abilities and styles, etc.) to create as many options and outcomes at an affordable loss (Sarasvathy, 2001). Consequently, a key feature of this bottom-up effectuation process, in the corporate context of firm-level entrepreneurship, involves the individual's ability to solve problems (needed for creating newness) combined with the risk-taking, innovativeness and proactiveness EO firm-level behaviours to create many strategic options possible (effective entrepreneurial decision-making).

Traditional entrepreneurship theory posits that individual entrepreneurs take risks to make great gains, are agents of the invention, and are quick to act when they discover an opportunity. What this highlights in addition to using an effectuation approach to EO is the importance of an individual's problem-solving style in this entrepreneurial behaviour and individual and organisational processes relationship. So, the entrepreneurial outcomes are not only influenced by the effectual vs. causal logic approach used but also by how individuals solve problems and make these entrepreneurial decisions based on their natural tendency towards affordable loss (effectual) or acceptable risk (causal). The KAI (Kirton's Adaption-Innovation) offers a problem-solving theory, based on psychology, that measures an individual's preferred problem-solving styles (Kirton, 2011). According to KAI one's preference for solving problems can be placed on a continuum between strong adaption vs. strong innovation (defined

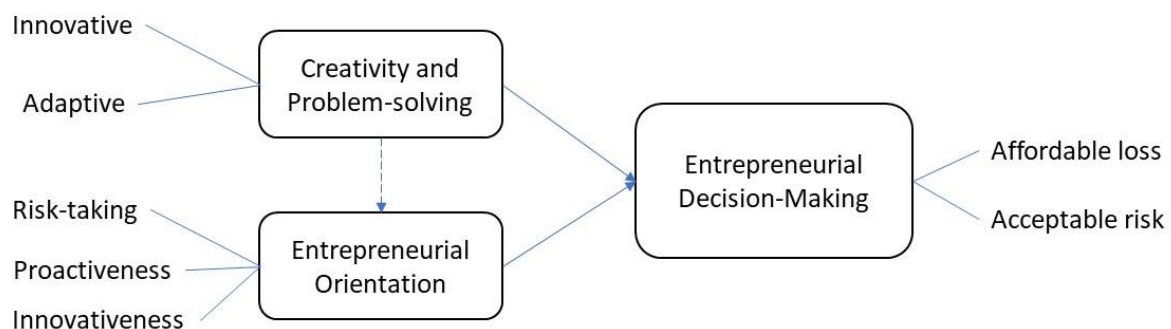
differently than EO innovativeness). One's problem-solving style is innate and is independent of intelligence, experience, age, motivation, values, ethnicity, culture, and situation (Friedel, 2014), making it a key variable of interest in better understanding entrepreneurial decisions. There is no ideal problem-solving style, in general, as each has advantages and disadvantages as it relates to the management of systems and the problem at hand. The character traits of more adaptive individuals prefer more structure, with a focus on detail and efficiency, more regard for group conformity, and favour incremental change. The more innovative problem-solving style, on the other hand, prefers less structure, with a more global perspective and ranging views to alter the 'system' differently, with less regard for group conformity and preference for revolutionary change. Thus, adaption-innovation theory, in the context of entrepreneurship, indicates that it applies to entrepreneurs' preferences for structure when creating new businesses, products, markets, etc. Comparing the descriptor traits of the more adaptive and more innovative problem-solving styles, and different EO orientations, there is reason to believe a relationship exists. Thus, in this study, we seek to answer the question: *To what extent does the combination of an individual's problem-solving style and firm-level EO influence entrepreneurial decision outcomes?*

In this study we take a different and novel approach that contributes new insights to the EO literature by applying the effectuation theory (Sarasvathy, 2001) used to link entrepreneurial behaviour and individual and organisational processes (Miller, 1983; Gartner, 1985; Randerson, 2016) in combination with KAI as a measure of an individual's preferred problem-solving styles (Kirton, 2011), which to our knowledge has not been used in EO research. Thus, the objective of this multidisciplinary research is to address this gap in the EO literature and test the relationships between the individual descriptors, firm-level entrepreneurial and behaviours and entrepreneurial decision-making outcomes.

Theorizing and hypotheses

To answer our overarching question we will explore the relationships using the theoretical model and hypotheses to better understand:

1. The relationship between the EO processes and problem-solving.
2. The extent to which the different problem-solving styles of individuals influence firm-level entrepreneurial decision-making outcomes; and
3. The relationship between firm-level EO processes and entrepreneurial decision-making.



In our full paper, we will develop our theoretical arguments, but for clarity of purpose, we present these as follows:

Hypothesis 1:

- a) Risk-taking is positively correlated to entrepreneurial decision-making.
- b) Proactiveness is positively correlated to entrepreneurial decision-making.
- c) Innovativeness is positively correlated to entrepreneurial decision-making.

Hypothesis 2:

The relationship between an innovative problem-solving style and entrepreneurial decision-making is curvilinear (inverted U-shape), wherein an excessively innovative style has a negative correlation with entrepreneurial decision-making and a moderate level of EO innovativeness has a positive correlation with entrepreneurial decision-making.

Hypothesis 3:

The relationship between an adaptive problem-solving style and entrepreneurial decision-making is curvilinear (U-shaped), wherein a high adaptive style has a negative correlation with entrepreneurial decision-making and a moderate level of adaptiveness has a positive correlation with entrepreneurial decision-making.

Hypothesis 4:

- a) There is a positive correlation between an Innovative problem-solving style and the EO processes; and
- b) There is a positive correlation between an adaptive problem-solving style and the Innovativeness and Proactiveness EO process, however, there is a negative correlation with risk-taking.

Method

We will use quantitative methods to test the correlations among these variables and test relationships using structural equation modelling. We have estimated that we need to collect 120^1 plus $30\%^2 = 160$ individuals within corporate firms that engage in corporate entrepreneurship activities focused on building new products, markets, businesses, ventures, etc. This data will be collected in USA and UK (80 from each) from people within Executive MBA and MBA cohorts responsible for making firm-level entrepreneurial decisions. We will ask them to complete the KAI psychometric as well as complete a short online survey to measure EO and decision variables in our model. We have already identified three instruments to measure the three constructs within our model: 1) KAI (Kirton, 2011), 2) EO risk-taking, proactiveness and innovativeness processes (Covin and Wales, 2012), and 3) Affordable loss through effectuation (Dew, Sarasathy, *et al.*, 2009).

Contributions

Our study will contribute to the theory in three ways. First, the use of effectuation in the EO literature is used to explain the ‘bottom-up’ link between entrepreneurial behaviours and decision-making outcomes. We believe this approach will create new insights when using EO to create newness (Randerson, 2016, p. 595) rather than the current approach causal ‘top-down’ approach to EO aimed at beating the competition to the punch (Miller, 1983, p.711). The

¹ GPower Calculation: F tests - Linear multiple regression: Fixed model, R^2 deviation from zero (8 predictors); A priori analysis; 8 with 3 tested predictors – $f^2 = 0.15$, Beta = 0.95

² An additional 30% added to account for unreliable or uninterpretable results.

second contribution we envisage will be to both the EO and problem-solving theory literature by using the KAI to measure individual preferences for solving problems, together with EO on entrepreneurial decision-making outcomes. The use of KAI in this context to our knowledge is completely novel. Third, little research exists connecting adaption-innovation theory to EO, and much can be learned about how more adaptive and more innovative individuals behave entrepreneurially.

This study will also contribute to practice by helping individuals and leaders improve entrepreneurial decision-making in dynamic, nonlinear and uncertain environments that enhance individual, group, and organizational performance. As well as use KAI results to match individuals and teams to enhance their performance and outcomes.

Development plan

This paper will be developed following these actions. The authors are heavily involved in collecting data and increasing the robustness of the data. This is expected to be completed by the end of August 2023, and a full first draft is expected to be written up by the end of October 2023.

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