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Innovation capability among small businesses: Review of empirical research

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Introduction

- Firms of all industries are nowadays developing innovation to guarantee their success in the markets.
- Academic discussion around this phenomenon has concentrated on the concept of innovation capability (Lawson and Samson, 2001; Calantone et al., 2002; Romijn and Albaladejo, 2002; Lin, 2007), which is central to small businesses aiming to compete with their larger and more resource possessing competitors.
- Previous studies have reviewed multiple areas of innovation capability literature.
 - Wolfe (1994) reviewed research on organizational innovation
 - Ali (1994) divided the review on incremental and radical innovation and presented several factors that affect product development decisions.
 - Garcia and Calantone (2002) clarified the innovativeness terminology and technological innovation typology by conducting a review of the literature from the engineering, marketing, and new product development.
 - Adams et al. (2006) focused their review on innovation management measurement with the aim of constructing a framework that can be used to assess firm level innovation activity.
 - Crossan and Apaydin (2010) took a more general approach in their review by concluding with a multi-dimensional framework of organizational innovation that links leadership, innovation as a process, and innovation as an outcome.
 - West and Bogers (2014) concentrated on specific innovation type, open innovation.



Introduction

- Despite the profusion of innovation reviews, there are no reviews of innovation capability in small business context.
- There is a need for such review, as innovation capability has been found to be a multi-faceted construct and differs among small and large firms (Forsman, 2011; Saunila and Ukko, 2014).
- Need to define the construct of innovation capability from a practical point of view by utilizing existing innovation research.
- This study aims to enhance the understanding about the characteristics of innovation capability in small business context.
 - by showing the conditions under which small firms are likely to pursuit high innovation capability.
 - by advancing current understanding on how innovation capability is associated with performance outcomes at firm level.



Methodology

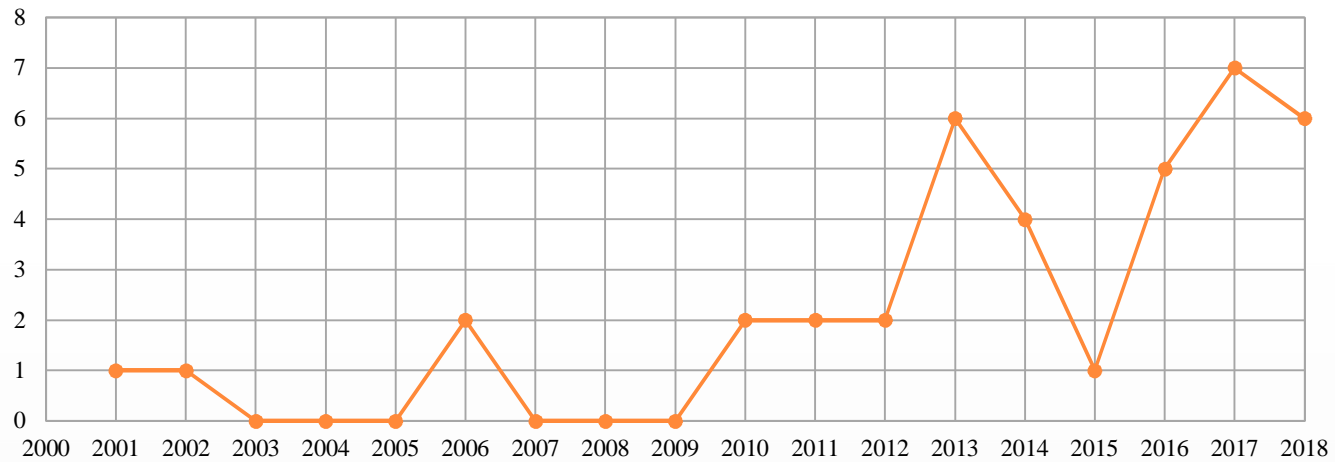
- Systematic review of innovation capability literature on the small business context.
- A process of Bakker (2010) as a basis of the review

- repeatability and transparency
- five steps, each step of which was to either include or eliminate articles in compliance with predetermined criteria

Inclusion criteria	Reason
Articles with empirical evidence	Provides empirical results about innovation capability among small businesses
Articles in peer-reviewed journals	Ensures the quality of the reviewed articles
Articles in English	Assists the replicability of the review
Articles in the subject category “Business, management and accounting”	Enhances the possibilities of practical contribution
Exclusion criteria	Reason
Other than firm level innovation capability (national or individual innovation capability)	Do not offer firm-level contribution
Project level performance	Do not offer firm-level contribution
Articles with theoretical/conceptual design	Do not offer empirical evidence

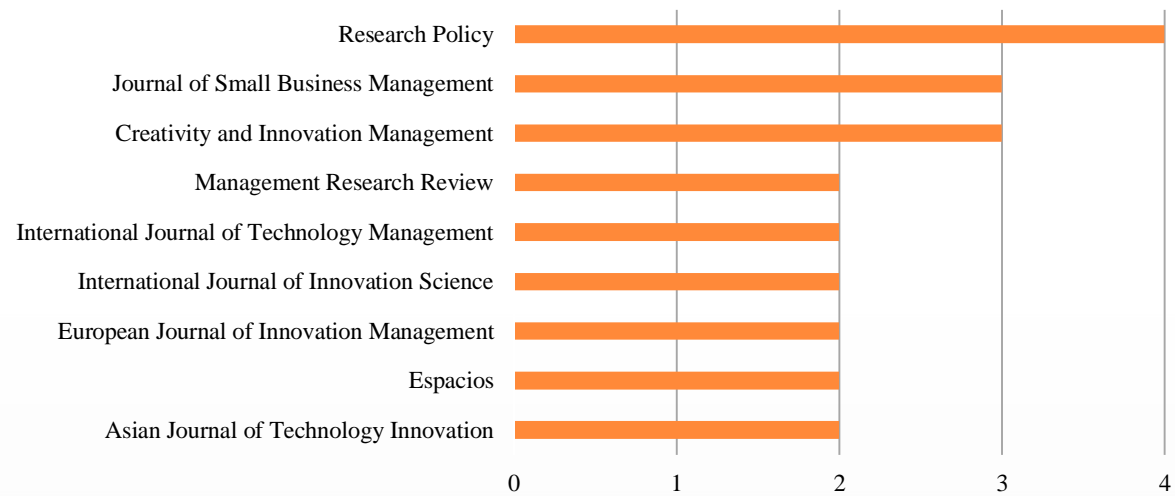


Descriptive results



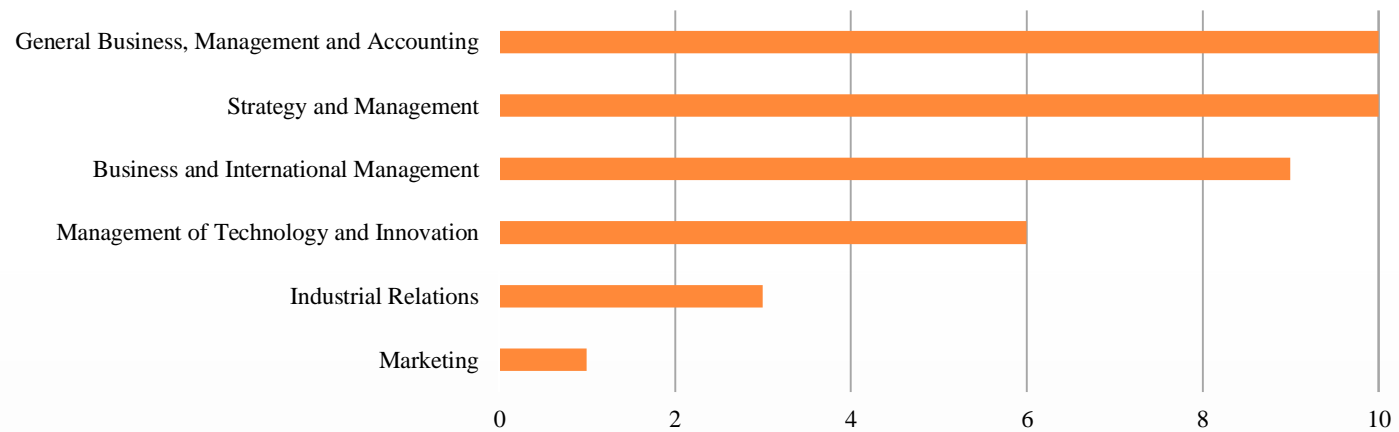


Descriptive results



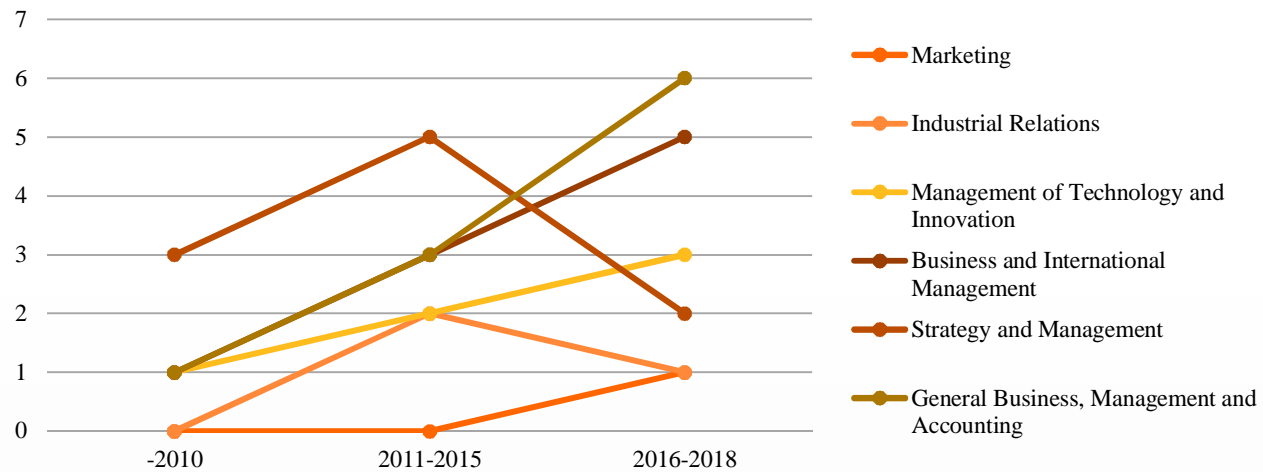


Descriptive results





Descriptive results





Descriptive results

- Innovation capability classifications
 - Innovation as a process, the potential to create innovative outputs
 - multiple dimensions that together contribute to high innovation capability (Boly et al., 2014; Saunila and Ukko, 2014; Saunila, 2017).
 - different kinds of capabilities that the total innovation capability consists of (Forsman, 2011; Oura et al., 2016; Fitz-Koch and Nordqvist, 2017)
 - Innovation as an outcome, the capacity to produce distinct types of innovation, such as
 - product innovation, process innovation, or organizational innovation (Kafetzopoulos and Psomas, 2015; Bruhn et al., 2016; Ilori et al., 2017; De Martino et al., 2018; Maldonado-Guzmán et al., 2018)
 - explorative and exploitative (Kittilaksanawong and Ren, 2013)
 - radical and incremental (Wang et al., 2013)



Determinants of innovation capability

- Determinants of overall innovation capability, i.e.
 - top management leadership (Kim et al., 2018),
 - knowledge development (Branzei and Vertinsky, 2006; Saunila and Ukko, 2014),
 - entrepreneurial orientation (Mohd Noor et al., 2017), and
 - external networks (Jørgensen and Ulhøi, 2010; Liu et al., 2013; Kim et al., 2018).

- Determinants of innovation types, i.e.
 - Product innovation capability; internal sources (e.g., prior work experience, education)
 - external sources (e.g., suppliers, customers) facilitate innovation capability, technological intensity (Romijn and Albaladejo, 2002; Bruhn et al., 2016).
 - Process innovation capability are positively affected by exploitative learning strategy (Valaei et al. 2016)
 - Organizational innovation capability is associated with external links (Bruhn et al., 2016)
 - Exploratory and exploitative innovation; collaboration with research institutes (Kittilaksanawong and Ren, 2013), organizational unlearning (Wang et al., 2013)



Effects of innovation capability

- Innovation capability and performance dimensions
 - Positive relation between overall innovation capability and firm performance
 - new product performance (Zhang and Hartley, 2018),
 - export performance (Oura et al., 2016)
 - brand performance (Odoom and Mensah, 2018), and
 - overall firm performance (Keskin, 2006; Dadfar et al., 2013).
 - Positive relation between innovation types and firm performance
 - Product innovation capability: export performance (Nassimbeni, 2001), growth (O'Cass and Sok, 2014), and overall competitive advantage (Landoni et al., 2016).
 - Multiple types of innovation capability, meaning innovation in products, processes, organization, and marketing: operational performance (Kafetzopoulos and Psomas, 2015), and business return (Maldonado-Guzmán et al., 2018).
 - Mixed results
 - Types of innovation capability and financial performance is mediated by operational performance (Kafetzopoulos and Psomas, 2015).
 - Product and process innovation capability does not ensure sales growth or market share (Mejía Vallejo and Arias-Pérez, 2017).



Conclusions

- Implications
 - Empirical evidence shows that innovation capability, conceptualized either as a process or as an outcome, affects firm performance.
 - In small business context, innovation capability is most often conceptualized as an outcome.
 - Survey designs dominate the field, whereas only a few studies adopted qualitative design.
 - Innovation capability is often studied in small businesses in general or in the manufacturing sector.

- Future research
 - Case studies to bring clarity to the role of different contextual factors, as they are central in the development of innovation capability among small businesses.
 - Need of studies focusing more closely on the service sector.
 - Whether firm performance is associated with specific types of innovation capability, such as process, organizational or marketing innovation capability, radical and incremental or explorative and exploitative.



Thank you!

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