

Doctoral Thesis Summary

Innovation management efficiency, open innovation and organizational agility: driving forces for SMEs' organizational performance

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In the knowledge-based economy, as the global business environment grows more competitive, innovation becomes crucial and takes on a dominant position in the market (Ratten et al., 2017). “Innovation is the fundamental element that drives progress and efficiency in all economic endeavors” (Kogabayev & Maziliauskas, 2017, p. 59). In his work, Drucker (2015) identifies seven distinct sources of innovation opportunities. These sources can be categorized into four internal factors, which include unpredictability, discrepancies between current and desired conditions, innovation driven by the need for process improvement, and changes in the industry or market. Additionally, there are three external factors, namely demographics, evolving perceptions, and new scientific and non-scientific knowledge.

There is a vast range of definitions for innovation. Innovation, according to Schumpeter (1934), refers to the economic consequences of technological advancements. Twiss (1980), on the other hand, defines innovation as the process that integrates science, technology, economics, and management to generate new ideas and bring them to the market. Afuah defines innovation as the integration of new knowledge into products, processes, and services (as cited in Kogabayev & Maziliauskas, 2017). Their shared characteristic is the process by which a promising endeavor is converted from a concept into a real application with the aid of comprehensive development and utilization of novel knowledge (Tidd & Bessant, 2013). Therefore, entrepreneurs utilize innovation as a means to convert changes into opportunities, and subsequently transform these possibilities into novel concepts that may be implemented on a large scale (Tidd & Bessant, 2013). Nevertheless, it is crucial to ensure that the innovation process is both sustainable and accountable. This means considering the potential repercussions of innovation decisions and proactively anticipating any adverse effects (Bessant & Tidd, 2015).

The innovation process is intricate, encompassing the proficient administration of several operations. It is, therefore, a management process, where the strategy employed plays a crucial

role in determining the obtained outcomes (Trott, 2017). Despite appearing random and uncertain, there are models that can influence the likelihood of success in innovation. These models do not rely on a predictable mechanism, but instead focus on creating conditions within the organization that increase the chances of solving multiple challenges with a high level of uncertainty (Tidd & Bessant, 2013).

Organizations can approach the innovation process in various ways. The main approaches include: having an innovation champion who has a high degree of freedom but limited authority, forming a dedicated innovation team that focuses on radical rather than incremental changes and tends to be skeptical, and establishing a central innovation department that collaborates with innovation ambassadors. The innovation department represents youth, novelty, and unconventional thinking, while the ambassadors bring experience, expertise, and deep knowledge to the company (von Stamm, 2003).

Globalization intensifies competition, corporations must demonstrate their competitiveness by competing not only with domestic organizations, but with all companies in the industry, irrespective of their country of origin. Thus, we are referring to a highly competitive global environment, where only those who can stay abreast of technical advancements and go beyond them are able to achieve success (Vătămănescu et al., 2016a, 2017). This matter is particularly relevant at the regional level, specifically within the European Union, where companies have unrestricted entry into all Member States and businesses from less advanced economies directly compete with those from more advanced nations. Furthermore, we are not solely referring to competition within the European Union, but also to economic competition between the European Union as a collective entity and other advanced economies globally. Hence, we may ponder upon the means by which a European software firm might rival renowned American or Asian companies, or how an Eastern European startup can bridge the gap and contend with an established Western European corporation, considering their equal access to the same marketplaces. We can also inquire about the feasibility of reconciling these inequalities and the strategies market participants can adopt to sustain their relevance, preserve their competitiveness, and achieve growth in the face of numerous existing market options, some of which are already established and globally recognized. One such approach is to achieve success by consistently introducing new and innovative ideas that provide consumers with unique experiences that are currently unavailable

from competitors, either due to limitations or other reasons. This should be accompanied by an effective marketing campaign (Dinu et al., 2023; Vătămănescu et al., 2022a, 2022b, 2023a).

Due to the wide range of available options in the market, many of which encounter the same question, innovation can be seen as a form of competition. Unlimited resources allow everyone to generate unique ideas. Hence, the manner in which these concepts are executed becomes crucial: expeditiously, proficiently, with few resources, at a minimal expense, and with a superior and more prosperous outlook for consumers. Thus, the significance of innovation management is emphasized (Dinu et al., 2023; Vătămănescu & Alexandru, 2018). Innovation management enables businesses to prioritise competitiveness and performance, both domestically and globally. This acknowledges the need of actively seeking out and implementing innovative changes on a systemic level, as well as the need to enhance competitiveness and generate value (Caetano, 2017; Vătămănescu et al., 2015, 2016b, 2016c).

The majority of theoretical resources primarily concentrate on the conceptualization of innovation management as a distinct area of study, highlighting its interdisciplinary character and several definitions. Studies exist that examine the suitability of innovation management in specific domains or for specific types of companies. There are also studies that explore the applicability of innovation management in certain types of economies, such as emerging economies. Additionally, there are studies that analyze the impact of various factors, such as leadership, team creativity, and team diversity, on the effectiveness of innovation management (Amabile & Pratt, 2016; Zouaghi et al., 2020). Furthermore, some studies investigate the overall synergy between agile management and innovation management in order to enhance organizational performance and gain a competitive advantage.

Based on these considerations, the issue is pertinent and current as it explores the theoretical principles and approaches that companies, particularly European small and medium-sized enterprises (SMEs), can utilize to enhance innovation management and increase competitiveness at both the EU and worldwide scale. Furthermore, on a national scale, the subject is significant and current, as numerous Romanian enterprises, particularly those of smaller size, are displaying a robust inclination towards agile approaches. Optimal utilization of limited resources and adaptability are crucial for organizations to expedite the attainment of their innovative objectives.

Giving way to these considerations, the purpose of this thesis is to examine the relationship between innovation management efficiency, open innovation, organizational agility, and organizational performance in the case of small and medium-sized enterprises (SMEs). The specific objectives derived from the purpose are: O1. To determine whether and to what extent innovation management efficiency influences open innovation; O2. To determine whether and to what extent innovation management efficiency influences organizational agility; O3. To determine whether and to what extent innovation management efficiency influences organizational performance; O4. To determine whether and to what extent open innovation influences organizational agility; O5. To determine whether and to what extent open innovation influences organizational performance; O6. To determine whether and to what extent organizational agility influences organizational performance.

With a view to achieve these goals, the research design was based on three pillars, namely a preliminary bibliometric analysis, an interview-based survey with 10 key informants and a questionnaire-based survey with managers from over 100 European small and medium-sized enterprises (SMEs). The insights provided by the respondents were compelling and managed to convey substantive information on the investigated relationships among constructs.

Following a processual approach, the thesis was structured in four main chapters. The first chapter introduces the main research themes and avails a bibliometric analysis as a first step towards a better understanding of the links between constructs. The second chapter delves into the literature review and the relationships among the key constructs. The third chapter presents the methodology of the thesis, providing detailed information on the interview and questionnaire-based surveys. The fourth chapter offers an informative outlook of the findings and their discussion, thus thoroughly testing the research hypothesis. The present work ends with the conclusions section which also points to the manifold implications of the research and to its limitations.

By looking into the relationships between innovation management efficiency, open innovation, organizational agility and organizational performance, the present thesis has brought forward a series of analyses (i.e., bibliometric analysis, interview and questionnaire-based surveys) meant to properly scrutinize the underlying connections among relevant business processes in European SMEs. To start with, utilizing the VOSviewer visualization tool, a bibliometric analysis was conducted with data retrieved from the Web of Science Core Collection database. This

preliminary investigation aimed to identify key research areas that could be further explored, focusing on how innovation management is linked to organizational performance, the achievement of competitive advantage and agility. The basic premise was that each company operates with its own distinct characteristics and strategies to maintain competitiveness, mainly through innovative business models and thorough innovation management that incorporates agility.

The results of the bibliometric analysis revealed significant connections among the constructs, suggesting the need for additional research in this field. Additionally, an accurate understanding of these relationships was expected to offer valuable information for business owners and management professionals, who strive to improve and maintain organizational resilience and adaptability in dynamic market conditions. Further, the corroboration of the qualitative and quantitative designs conclusively showed that innovation management efficiency is essential in sustaining organizational agility and performance. Through strategic open innovation, organizations can not only adapt more adeptly to market fluctuations but also support competitive advantage and the insights provided based on the applied analysis methods contribute to both academic theory and practical management, allowing to navigate increasingly complex and dynamic environments.

More specifically, this thesis investigated the impact of innovation management efficiency on organizational agility and performance, with an emphasis on how these elements are managed and measured within companies. The analysis revealed that efficient innovation management, characterized by the strategic integration of external knowledge and resources through open innovation initiatives, significantly enhances organizational agility. This integration allows companies to respond very fast to market changes and take advantage of external innovations, enhancing their competitive advantage. The study found that organizations measure innovation management efficiency using a combination of performance metrics such as time-to-market, innovation Return on Investment (ROI), and customer satisfaction and it resulted that these metrics help organizations to follow the effectiveness of their innovation strategies in real-time, facilitating immediate adjustments and long-term strategic alignments. Organizational agility, supported by efficient innovation management, directly contributes to improved performance outcomes. Companies that succeed in managing their innovation processes efficiently show better adaptability, faster growth, and stronger market positions.

Overall, the core focus of this thesis is to demonstrate how innovation management efficiency acts as a driving force, enabling SMEs to capture and leverage innovations effectively, through agility, while measuring their impacts on organizational performance in an accurate manner. In today's rapidly changing market environment, organizational agility has transitioned from a beneficial attribute to an essential behavior that supports an organization's ability to stay competitive and responsive to external business stimuli. This research shows that integrating open innovation and strategically enhancing organizational agility are not merely advantageous but are necessary for boosting organizational resilience and adaptability.

Conflating these theoretical insights, the research provides several key insights with regards to enhancing the dynamic capabilities knowledge. It demonstrates how innovation management serves as a dynamic capability that enables organizations to rapidly adapt and renew their resource base for sustained competitive advantage and also provides empirical information supporting the strategic use of open innovation to boost organizational agility and performance, thus broadening the traditional scope of open innovation research. Not least, the research supports and extends agility theory by showing that organizational agility, supported through efficient innovation management, is crucial for achieving superior performance in highly dynamic markets.

As far as the managerial contributions are concerned, for management representatives, this study highlights the strategic integration of open innovation, through the strategic business development lenses, while managers are advised to strategically integrate open innovation into their core operations to harness external capabilities and accelerate innovation processes. Moreover, organizations should prioritize agility within their strategic frameworks to quickly adapt to technological and market changes, thus maintaining a competitive advantage on the market. Considering the importance of results measurement, it has been concluded that it is critical for managers to consider a balanced approach in measuring innovation efficiency that not only tracks financial impact, but also assesses customer engagement and satisfaction to fully understand the impact of innovation initiatives (as also underscored by Thabet et al., 2024).

The practical implications of this study are very transformative for managers and business leaders in charge of navigating dynamic environments. The strategic insights derived from the extensive analysis offer a comprehensive framework for embedding open innovation processes and supporting agility. Furthermore, the thesis outlines a multi-dimensional approach to measuring innovation management efficiency, utilizing a wide range of performance metrics with relevant

industry applications. This approach provides organizations with the tools necessary to monitor and evaluate the efficiency of their innovation strategies in real-time. By acknowledging the limitations and proposing directions for future research, the thesis aims to inspire ongoing dialogue and investigation into these critical areas, granting valuable resources to strengthen their capacity for innovation and strategic agility to both the academic community and industry practitioners.

As any other research endeavor, the current one is not exempted from limitations. The sampling method used in this study was non-probability based, specifically relying on judgment sampling methods to gather data from European SMEs' representatives. This approach facilitated access to a targeted group of respondents, particularly senior leaders and professionals within the technology and IT sectors, it may also limit the general applicability of the findings. Non-probability sampling restricts the ability to apply the study's results to the broader population of European SMEs. Future studies could benefit from using probability sampling techniques to enhance the representativeness and external validity of the findings.

The sample was predominantly composed of respondents from the Technology/IT sector, constituting over 42% of the total. While this focus provides deep insights into a rapidly evolving industry, the findings might be less applicable to sectors with different innovation dynamics and organizational structures, such as manufacturing or services. Expanding future research to include a more varied industry representation could help in understanding the broader applicability of the identified connections between the constructs of innovation management efficiency, open innovation, organizational agility and organizational performance.

While the study included respondents from various European countries, the demographic and cultural diversity within the sample was limited. Most respondents were from well-defined educational and professional backgrounds, potentially overlooking insights from less formally educated individuals or those in non-leadership roles (low response percentage applied in this case). Future research could aim to include a broader demographic and cultural approach to examine how different backgrounds influence opinions and practices related to the analyzed constructs. The data reported through questionnaires can introduce biases such as social desirability or respondent fatigue, which might affect the accuracy of the data collected.