

Entrepreneurial Leadership and Market Turbulence dalam Perspective Pengaruh Absorptive Capacity Terhadap Innovation Ambidexterity

Entrepreneurial Leadership and Market Turbulence in The Perspective of The Effect of Absorptive Capacity on Innovation Ambidexterity

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Abstrak

Penelitian ini bertujuan untuk mempelajari pengaruh absorptive capacity terhadap innovation ambidexterity, serta moderasi dari entrepreneurial leadership dan market turbulence pada hubungan kedua konsep tersebut. Metode yang digunakan pada penelitian ini adalah metode survey dengan responden adalah leaders (founder/key manager) dari 265 perusahaan SME pada berbagai industri di Jawa Timur. Model penelitian dibangun dengan menggunakan pendekatan structural equation modelling (SEM) dan hubungan antar variable diuji menggunakan PLS-SEM. Hasil penelitian ini menunjukkan peran absorptive capacity untuk memperkuat strategi innovation ambidexterity. Selain itu peran entrepreneurial leaders menjadi kunci yang memperkuat hubungan keduanya. Pengaruh kemampuan dinamis perusahaan dalam mengelola external knowledge terhadap strategi innovation ambidexterity juga semakin intensif saat terjadi kondisi lingkungan eksternal perusahaan tidak menentu. Se jauh yang diketahui, belum banyak penelitian terdahulu yang mengkaji pengaruh antara absorptive capacity, innovation ambidexterity, entrepreneurial leadership dan market turbulence secara menyeluruh dalam satu model penelitian. Hasil penelitian ini mampu menggambarkan fenomena proses inovasi yang terjadi pada SME. Selain itu pimpinan perusahaan ternyata memegang peran kunci yang dapat berdampak pada intensitas strategi inovasi yang diterapkan. Lebih jauh, tidak menentunya kondisi lingkungan perusahaan dapat berdampak pada absorptive capacity perusahaan terhadap innovation ambidexterity.

Kata Kunci: *Absorptive capacity, entrepreneurial leadership, market turbulence, innovation ambidexterity, small medium enterprise*

Abstract

The primary objective of this research is to examine the impact of absorptive capacity on innovation ambidexterity. Additionally, this study seeks to investigate the moderating effects of entrepreneurial leadership and market turbulence on the relationship between absorptive capacity and innovation ambidexterity. The research employed a survey methodology, wherein the participants consisted of leaders, specifically founders or key managers, from a total of 265 small and medium-sized enterprises (SMEs) across diverse industries in the region of East Java. The research model was constructed utilizing the structural equation modeling (SEM) approach, and the association between variables was examined employing partial least squares structural equation modeling (PLS-SEM). The findings of this study demonstrate the significance of absorptive capacity in enhancing innovation ambidexterity strategies. Furthermore, it is imperative to acknowledge that the pivotal factor that enhances the connection between the aforementioned entities lies in the involvement of entrepreneurial leaders. The impact of a company's dynamic capability to effectively manage external knowledge on its innovation ambidexterity strategy is further heightened in situations where the external environmental conditions are characterized by uncertainty. To the best of our knowledge, there is limited existing research that has comprehensively investigated the relationship among absorptive capacity, innovation ambidexterity, entrepreneurial leadership, and market turbulence within a single research model. The findings of this study provide a comprehensive description of the innovation process phenomenon observed in small and medium-sized enterprises (SMEs). Furthermore, it has been observed that the involvement of company executives significantly influences the level of intensity with which the innovation strategy is implemented. Moreover, the unpredictability of the company's environmental circumstances may influence the company's ability to effectively absorb and leverage innovation ambidexterity.

Keywords: Absorptive capacity, entrepreneurial leadership, market turbulence, innovation ambidexterity, small medium enterprise

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Introduction

The Covid-19 pandemic has necessitated companies to engage in innovative practices as a means of mitigating the adverse effects brought about by the pandemic Tsai et al. (2022). The capacity of an organization to cultivate team learning capability and foster an environment conducive to the creative process plays a crucial role in facilitating innovation (Batt-Rawden et al., 2019). According to Tikas (2023), integrative value co-creation is one of the determinants of team dynamic capability formation. Nevertheless, the findings of the study conducted by Petti et al. (2020) suggest that the capacity to recognize and capitalize on opportunities plays a more significant role in enhancing organizational performance. The capacity of the organization to assimilate and implement information plays a crucial role in the formulation of a strategic approach aimed at identifying novel opportunities (Carrasco-Carvajal et al., 2023), as well as in fostering an environment conducive to innovation (Pangarso et al., 2020).

According to Božič and Dimovski (2019), innovation ambidexterity refers to a company's capacity to effectively navigate the innovation process by concurrently adopting both exploratory and exploitative approaches. This enables the company to generate incremental or radical innovations, thereby ensuring the long-term viability of the organization. The research pertaining to ambidexterity frequently concentrates exclusively on organizations of considerable size or those characterized by a multi-structured nature. This phenomenon occurs due to the necessity of sufficient resources for organizational ambidexterity (Raisch & Birkinshaw, 2008). The capacity for ambidexterity within SMEs remains constrained due to the need for managerial proficiency, well-defined protocols, and formalized systems that effectively manage the equilibrium between conflicting demands (Soto-Acosta et al., 2018). Previous research findings indicate that SMEs exhibit distinct patterns in the implementation of innovation ambidexterity, as compared to larger or more complex organizations (Cao et al., 2009).

Absorptive capacity, as described by Cabeza-Pullés et al. (2020), is a crucial capability that enables companies to effectively acquire and assimilate information and knowledge, thereby fostering innovation. The significance of the capacity of this company lies in its pivotal role in the acquisition and assimilation of external information for the purpose of fostering innovation. According to Carrasco-Carvajal et al. (2023), there exists a positive relationship between a company's absorptive capacity and its ability to recognize novel business prospects or develop differentiation strategies, thereby enhancing its competitive advantage. The empirical findings indicate the significance of leaders' involvement in the creative process (Hou et al., 2024), fostering innovative behaviour (Malibari & Bajaba, 2022), and facilitating the creation of innovations (Mehmood et al., 2019). The findings of the study conducted by Chen and Liu (2020) demonstrate the impact of the top management team on the concept of innovation ambidexterity. It is crucial for leaders to effectively communicate precise and well-defined objectives and timelines for the purposes of exploration and exploitation, in order to facilitate the appropriate implementation of innovation strategies by subordinates. Market turbulence is a

significant determinant that can influence dynamic capability, which is a critical component of organizational effectiveness. The organization implements various modifications in order to proactively anticipate the repercussions resulting from this turbulence (Le & Le, 2023a). Market turbulence refers to the dynamic nature of customer composition, structure, and preferences, as defined by Nakata and Hwang (2020). During periods of market turbulence, the ability to adapt dynamic capabilities can enhance an organization's capacity for innovation. This phenomenon can be achieved by expediting the acquisition and integration of external information in order to generate innovative products or services that are responsive to market fluctuations.

Existing research has primarily focused on ambidexterity innovation in large corporations, and it is still uncommon to investigate SMEs (Xia et al., 2023). According to the empirical study conducted by Müller et al. (2020), there are discernible variations in the behaviour of the innovation process when comparing large companies to SMEs. SMEs present an intriguing area of study when examining their dynamic capacity, as these companies often exhibit incomplete organizational structures. There remains a dearth of research examining the specific facets of leadership that determine the varying degrees of influence associated with the aforementioned two concepts. The examination of this subject matter is intriguing due to the significant influence exerted by entrepreneurs in enterprises that maintain an organizational framework derived from a single SME founder. Moreover, the presence of market volatility is a topic of significant interest, particularly in the aftermath of the pandemic. In light of the prevalence of turbulence in the business landscape, companies are compelled to exhibit their utmost capabilities, particularly in the realm of formulating an effective innovation strategy for the development of novel products. The purpose of this research is to look at the interaction between leaders and market turbulence in terms of the impact of absorptive capacity on the implementation of innovation ambidexterity strategies in SMEs. The purpose of this research is to look at the interaction between leaders and market turbulence in terms of the impact of absorptive capacity on the implementation of innovation ambidexterity strategies in SMEs. To the best of current scholarly knowledge, there remains a dearth of research that effectively integrates these concepts within a unified and comprehensive research framework. The objective of this study is to examine the impact of absorptive capacity on innovation ambidexterity, with a focus on the moderating effects of entrepreneurial leadership and market turbulence in SMEs. The findings of this study are expected to close a research gap by describing the relationship between variables in the research model.

This study provides empirical evidence regarding the impact of absorptive capacity on a firm's innovation strategy. Furthermore, it has been demonstrated that company leaders play a crucial role in reinforcing the innovation process within The findings of this study are expected to close a research gap by describing the relationship between variables in the research model. The occurrence of market turbulence conditions subsequent to the pandemic has been found to significantly influence the adoption of innovation ambidexterity strategies. The findings of this study effectively illustrate the particular occurrences of the innovation process, while also highlighting the significant influence of entrepreneurial leadership and market turbulence on SMEs. These findings contribute to a better understanding of SME management. The findings of this study confirm the importance of the leader's role as a key person who can direct the organization's direction, including the development of innovation strategies. Furthermore, uncertain environmental conditions can hasten the innovation process. The agility of SMEs in manoeuvring during difficult conditions is one of the benefits of SMEs with a leaner organizational structure.

This study began with an introduction that discussed the research topic's background, research gap, and research objectives. Furthermore, we will go over the theoretical foundations and arguments for the relationship between variables. The explanation of research methods, analysis results, discussion and implications of research results, and conclusion followed.

Innovation ambidexterity

The term innovation ambidexterity refers to a company's efforts to pursue both exploitative and exploratory innovation strategies at the same time (Li et al., 2023). Exploitative innovation focuses on modifying products and services for existing customers and is distinguished by the additional value provided to customers. In contrast, innovation exploitation focuses on developing completely new products and services that provide different value to new customers or markets. This strategy is frequently accompanied by rapid resource allocation and the expansion of existing offerings (Li et al., 2023). Innovation ambidexterity can boost a company's competitiveness and overall growth by combining exploitative and exploratory innovations (Zhang et al., 2016). Given the significance of innovation ambidexterity, researchers have conducted research to uncover the origins of this strategy (Le & Le, 2023b; Malibari & Bajaba, 2022; Petti et al., 2020)

Absorptive capacity toward innovation ambidexterity

The concept of absorptive capacity refers to the dynamic capability of organizations to acquire and assimilate external knowledge and subsequently utilize it in the creation of innovative outputs (Lim & Ok, 2023). According to Carrasco-Carvajal et al. (2023), the presence of this dynamic capability enables organizations to assimilate knowledge regarding potential opportunities and the effective utilization of novel technologies within their innovation process. In this scenario, the presence of external knowledge, the company's capacity to assimilate information, the cultivation of creativity in idea generation, and the facilitation of innovation are pivotal undertakings within the organization. The necessity of employee collaboration lies in the acquisition and integration of externally sourced knowledge with internal capabilities, thereby facilitating the transformation of external resources into innovative outcomes. Hence, the engagement of employees has an impact on the organization's ability to acquire, assimilate, and apply external knowledge, as discussed by (Rangus & Slavec, 2017).

According to Zahra and George (2002), the absorptive capacity process consists of four distinct stages: acquisition, assimilation, transformation, and exploitation. The researchers subsequently classified these four stages into two distinct categories, specifically potential absorptive capacity and realized absorptive capacity. Zahra and George (2002) assert that the innovation process commences with the acquisition of information, which involves identifying and obtaining pertinent knowledge in order to generate novel insights. The subsequent step in the process of knowledge assimilation entails the examination and evaluation of recently obtained insights. In order to ensure the appropriate assimilation of external information, it is imperative for companies to possess the capability to accurately categorize and analyze distinct pieces of information (Cohen & Levinthal, 1990). The process of knowledge transformation encompasses the integration of pre-existing knowledge with newly acquired or assimilated knowledge within the organization's mechanisms. The aforementioned process enhances the assimilation of novel knowledge by selectively processing acquired information or by reevaluating preexisting knowledge through novel perspectives (Mariano & Walter, 2015). Knowledge exploitation refers to the organizational process through which a company utilizes its acquired knowledge to adapt, modify, or generate novel products or services. If this operational strategy can be effectively implemented, it enables the organization to attain a

competitive edge. Each stage within the process assumes a distinct yet interconnected function in the development of absorptive capacity within the organization. According to Pradana et al. (2020), the performance of a company is influenced by its ability to develop the processes associated with the generation of absorptive capacity.

The impact of absorptive capacity on innovation has been subject to empirical investigation by various scholars (Carrasco-Carvajal et al., 2023; Scuotto et al., 2017; Zhang et al., 2020). Similarly, the empirical findings indicate that absorptive capacity has an impact on innovation ambidexterity (Božič & Dimovski, 2019; Müller et al., 2020; Pangarso et al., 2020). According to a study conducted by Müller et al. (2020), it has been found that the process of acquiring, assimilating, transforming, and leveraging external information and knowledge enables companies operating in the context of industry 4.0 to effectively implement both exploratory and exploitative innovation strategies. The study conducted by Pangarso et al. (2020) presents findings that establish a correlation between absorptive capacity and the implementation of ambidexterity innovation strategies within the context of private higher education institutions in Indonesia. According to Cabeza-Pullés et al. (2020), a comparison between knowledge transfer and knowledge absorption reveals that only the latter demonstrates an impact on innovation ambidexterity. In this study, the hypothesis to be proposed is

H1: Absorptive capacity positively affects innovation ambidexterity.

Moderation of Entrepreneurial Leadership

Scholars have shown interest in entrepreneurial leadership due to its progressive, adaptive, and responsive attributes, as well as its flat hierarchical structure. Consequently, this form of leadership is inclined to be more receptive to consumer needs and conducive to the emergence of innovation (Yang & Bentein, 2023). Entrepreneurial leadership, as distinguished from other styles of leadership, prioritizes leader conduct that facilitates the creative process. Specifically, it involves the identification, assessment, and exploitation of opportunities for the advancement of novel business processes and products (Gupta et al., 2004). The study conducted by Hoang et al. (2023) presents empirical findings that establish a noteworthy positive relationship between entrepreneurial leadership and innovation. Furthermore, the study identifies knowledge acquisition and market sensing capability as mediating factors in this relationship. According to a study conducted by Hensellek et al. (2023), when confronted with the subject of SMEs, it has been observed that the impact of entrepreneurial leadership on strategic flexibility is particularly pronounced in organizations characterized by a narrower span of control. This demonstrates the significance of the dominant leader within the context of SMEs.

According to Renko et al. (2015), entrepreneurial leaders possess a mindset that is oriented towards identifying and capitalizing on opportunities. This mindset enables them to effectively inspire and engage employees, fostering their active participation in the pursuit and attainment of organizational objectives. According to Hoang et al. (2022), when employees are intrinsically motivated, they have the potential to cultivate advanced cognitive capabilities, leading to the manifestation of innovative behaviours. Bagheri and Harrison (2020) conducted a comprehensive study on the development of entrepreneurial leadership. Based on the findings of the researchers, entrepreneurial leadership can be delineated into various dimensions, specifically framing challenges, managing uncertainty, providing financial support, fostering commitment, establishing significance, identifying and capitalizing on opportunities, prioritizing learning, and nurturing a collective belief in creative capabilities.

The study conducted by Hoang et al. (2022) pertaining to SMEs operating within the tourism sector reveals a discernible, albeit indirect, relationship between entrepreneurial leadership and innovation. The impact is facilitated through the presence of trust in leaders. The study conducted by Bagheri et al. (2020) investigated the relationship between entrepreneurial leadership and innovative worker behaviour in technology-based high schools. The authors observed that this influence was present both through direct and indirect pathways. The influence that is not direct is facilitated by the employees' creative self-efficacy and their passion for inventing. Akbari et al. (2020) conducted a study that demonstrates the significant impact of entrepreneurial leadership on innovation work behaviour. This influence is observed both directly and indirectly, with the latter being mediated by factors such as creativity, self-efficacy, and support for innovation. According to Fontana and Musa (2017), the impact of entrepreneurial leadership on innovation performance can be observed through its mediation of various innovation processes, such as idea generation, idea selection, idea development, and idea diffusion. The present case demonstrates a congruence between the innovation process and absorptive capacity, which in turn influences the company's innovation strategy. Entrepreneurial leadership plays a pivotal role in determining the strategies employed during the innovation process. The success of innovation in SMEs is contingent upon the presence of robust leadership. Based on the preceding discussion, the hypothesis posited in this study is

H2: Entrepreneurial leadership moderates the influence of absorptive capacity on innovation ambidexterity

Moderation of Market Turbulence

Market turbulence refers to the external circumstances faced by a company that can influence the dynamic competency conditions and organizational factors, ultimately affecting the overall performance and effectiveness of the organization (Le & Le, 2023b). The primary focus and utmost concern of entrepreneurs is the ability of companies to effectively navigate and surmount instability and uncertain circumstances. Market turbulence refers to external factors that affect the dynamic competency conditions and organizational factors, ultimately influencing the overall performance and effectiveness of an organization (Le & Le, 2023b). The primary focus and utmost concern of entrepreneurs is the ability of companies to effectively navigate and surmount instability and uncertain circumstances. Entrepreneurs consistently endeavour to identify the optimal innovation strategy, particularly in the enhancement and creation of novel services and products, the optimization of operational circumstances, and the enhancement of the organization's reputation (Le & Le, 2022).

According to a study conducted by Le and Le (2023b), there is evidence suggesting that market turbulence plays a moderating role in the relationship between knowledge sharing behavior and both radical and incremental innovation. The findings of a study conducted by Shehzad et al. (2022) suggest that market turbulence has a moderating influence on the activities of tacit and explicit knowledge sharing related to frugal innovation. This includes knowledge sharing from leaders, colleagues within the organization, as well as external sources. During periods of market turbulence, the act of sharing knowledge plays a crucial role in enhancing the accuracy and relevance of the knowledge base and previous expertise. This, in turn, facilitates the development of innovation capabilities. Furthermore, the impact of knowledge sharing on innovation becomes more pronounced as it interacts with other factors. Moreover, it has been found that market turbulence plays a constructive role in moderating the influence of enhanced innovation capability on innovation performance, as indicated by the study conducted by Gyedu et al. (2021). An increase in market turbulence leads to a corresponding rise in uncertainty

regarding future sales and revenue. According to Nakata and Hwang (2020), in such instances, organizations are obligated to possess the capability to promptly adjust their strategies in response to changing customer preferences. According to the researchers, the capacity to adapt to market fluctuations in a highly unpredictable setting, by embracing novel elements that are preferred by customers, will influence the formulation of the company's innovation strategy. Predicated on the premises previously expounded, hypothesis for this study is

H3: Market turbulence moderates the influence of absorptive capacity on innovation ambidexterity.

Research Method

The present study employed cross-sectional and correlational research designs. The cross-sectional approach is employed as it allows for the collection of data through survey methods to visually document occurring phenomena. This method is suitable because data can be collected simultaneously. The correlational method is employed in research models to investigate the relationship between different concepts. A comprehensive set of 265 questionnaires was obtained and duly completed by participants who were identified as owners, general managers, or managers possessing a thorough understanding of the innovation process within their respective companies. The process of variable measurement involves the utilization of a measurement scale ranging from 1 to 10, wherein level 1 represents a strong disagreement and level 10 signifies a strong agreement (Nunnally & Bernstein, 1994).

The measurement methodology employed in the model draws upon various prior studies that have investigated similar research areas. The variables related to absorptive capacity were utilized in this study, drawing inspiration from the research conducted by Flatten et al. (2011). The researchers measured absorptive capacity in four dimensions: acquisition, assimilation, transformation and exploitation. Next for the variables pertaining to Entrepreneurial leadership have been derived from the construct of measuring variables developed by Bagheri and Harrison (2020). In the study, researchers broke down the measurements into eight dimensions including framing challenges, absorbing uncertainty, underwriting, building commitment, defining gravity, opportunity identification and exploitation, orientation towards learning and creative collective self-efficacy. The research conducted by Nakata and Hwang (2020) incorporates the notion of variable measurement in the context of market turbulence. The measurement of the innovation ambidexterity variable in this study has been derived from the measurement concept employed by Božič and Dimovski (2019) which in detail separates indicators from exploratory and exploitative.

The process of hypothesis testing is commonly employed in the field of research and is often evaluated using Partial Least Squares Structural Equation Modelling (PLS-SEM). Structural equation modelling (SEM) is advocated by scholars due to its numerous advantages. This method is considered appropriate when the structural model is complex and includes numerous constructions, indicators, and variable relationships (Hair et al., 2019). These benefits include its applicability in assessing predictive effects, its ability to handle complex models, and its ability to produce significant statistical power even with small to moderate sample sizes. (Hair et al., 2017).

Result and Discussion

Result

The data presented in Tables 1 demonstrate that the reliability indicator surpasses the predetermined threshold of 0.708. Composite reliability falls within the interval of 0.70 to 0.90. Furthermore, it is worth noting that Cronbach's alpha is commonly regarded as a conservative measure. However, it is not advisable to employ PLS-SEM in this scenario due to its limitations in terms of measuring reliability. Subsequently, the average variance extracted (AVE) is computed in order to assess the convergent validity of the extracted data. According to Fornell and Larcker (1981), a threshold value greater than 0.50 is considered acceptable. The validity of discriminants, as per the criteria set forth by Fornell and Larcker (1981), is depicted in Table 2. In this analysis, we examine the relationship between the square root of the average variance extracted (AVE) and the correlation between constructs. While this criterion is no longer endorsed in the context of Partial Least Squares (PLS), it is worth noting as a cautious measure.

Table 1. Reliability and convergent validity of variables

Absorptive capacity	Outer loading	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
Acquisition		0.820	0.893	0.736
ACQ1	0.864			
ACQ2	0.909			
ACQ3	0.797			
Assimilation		0.877	0.916	0.731
ASS1	0.883			
ASS2	0.830			
ASS3	0.833			
ASS4	0.873			
Transformation		0.864	0.917	0.786
TRAN1	0.915			
TRAN2	0.931			
TRAN3	0.918			
TRAN4	0.900			
Exploitation		0.936	0.954	0.839
EXP1	0.853			
EXP2	0.901			
EXP3	0.906			
Entrepreneurial leadership				
Framing challenges		0.777	0.857	0.600
FC1	0.810			
FC2	0.799			
FC3	0.743			
FC4	0.745			
Absorbing uncertainty		0.829	0.887	0.663
AU1	0.829			
AU2	0.839			
AU3	0.861			
AU4	0.721			
Underwriting				

U1	0.743	0.867	0.901	0.602
U2	0.802			
U3	0.720			
U4	0.815			
U5	0.821			
Building commitment		0.818	0.880	0.650
BC1	0.712			
BC2	0.908			
BC3	0.800			
BC4	0.792			
Defining gravity		0.850	0.892	0.624
DG1	0.799			
DG2	0.856			
DG3	0.704			
DG4	0.794			
DG5	0.790			
Opportunity identification and exploitation		0.929	0.939	0.608
OIE1	0.736			
OIE2	0.820			
OIE3	0.785			
OIE4	0.844			
OIE5	0.796			
OIE6	0.776			
OIE7	0.734			
OIE8	0.705			
OIE9	0.791			
OIE10	0.801			
Orientation towards learning		0.797	0.881	0.712
OL1	0.775			
OL2	0.867			
OL3	0.886			
Creative collective self-efficacy		0.914	0.940	0.796
CCS1	0.824			
CCS2	0.906			
CCS3	0.916			
Innovation ambidexterity				
Exploratory innovation		0.884	0.915	0.684
PLOI1	0.846			
PLOI2	0.837			
PLOI3	0.815			
PLOI4	0.866			
PLOI5	0.766			

Exploitative innovation		0.908	0.929	0.686
PLOR1	0.758			
PLOR2	0.840			
PLOR3	0.849			
PLOR4	0.848			
PLOR5	0.851			
PLOR6	0.821			
Market turbulence		0.828	0.886	0.661
MT1	0.769			
MT2	0.833			
MT3	0.779			
MT4	0.869			

Table 2. Discriminant validity (Fornell-Larcker criterion)

	Absorptive capacity	Entrepreneurial leadership	Innovation ambidexterity	Market turbulence
Absorptive capacity	0.782			
Entrepreneurial leadership	0.730	0.773		
Innovation ambidexterity	0.719	0.693	0.782	
Market turbulence	0.553	0.777	0.578	0.813

Table 3. Structural model: causal relations analysis

	Koefisien beta (β)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Absorbtive_Capacity -> Innovation Ambidexterity	0.308	0.088	3.523	0.000
Absorbtive_Capacity -> Assimilation	0.829	0.033	25.320	0.000
Absorbtive_Capacity -> Transformation	0.922	0.013	73.718	0.000
Absorbtive_Capacity -> Exploitation	0.854	0.024	35.105	0.000
Absorbtive_Capacity -> Acquisition	0.838	0.022	38.493	0.000
Entrepreneurial_Leadership -> Innovation_Ambidexterity	0.367	0.073	5.048	0.000
Entrepreneurial_Leadership -> Framing challenges	0.777	0.035	22.251	0.000
Entrepreneurial_Leadership -> Absorbing uncertainty	0.740	0.036	20.682	0.000
Entrepreneurial_Leadership -> Underwriting	0.915	0.012	74.509	0.000
Entrepreneurial_Leadership -> Building commitment	0.914	0.012	79.489	0.000
Entrepreneurial_Leadership -> Defining gravity	0.870	0.015	58.236	0.000
Entrepreneurial_Leadership -> Opportunity	0.877	0.013	65.005	0.000

identification and exploitation				
Entrepreneurial_Leadership -> Orientation towards learning	0.824	0.028	29.146	0.000
Entrepreneurial_Leadership -> Creative collective self-efficacy	0.837	0.025	33.582	0.000
Innovation_Ambidexterity -> Exploratory innovation	0.849	0.025	33.954	0.000
Innovation_Ambidexterity -> Exploitative innovation	0.962	0.006	157.331	0.000
Market_Turbulence -> Innovation Ambidexterity	0.272	0.059	4.626	0.000

The evaluation of structural models was conducted by considering the statistical significance of the beta coefficient (β), the coefficient of determination (R^2), the direct and indirect influences, and the magnitude of f^2 , as outlined by Hair et al. (2019). The present study aims to examine the impact of absorptive capacity on innovation ambidexterity. As seen on Table 3, the results of the tests indicated a statistically significant positive influence, with a beta coefficient (β) of 0.308 and a p-value of 0.000. Additionally, as described in Figure 1, the coefficient of determination (R^2) was found to be 0.631. This finding demonstrates that the concept of absorptive capacity can account for 63.1% of the variability observed in the adoption of innovation ambidexterity strategies within SMEs. The analysis of bias-corrected confidence intervals is conducted using bootstrap techniques and percentile methods. Based on the findings obtained, the hypothesis H1 has been validated. Additionally, the study provided confirmation of the moderating influence of entrepreneurial leadership on the relationship between absorptive capacity and innovation ambidexterity ($\beta = 0.367$; $p = 0.000$). The obtained findings have confirmed the validity of hypothesis H2. The study also provided confirmation of the influence of market turbulence as a moderator on the relationship between absorptive capacity and innovation ambidexterity ($\beta = 0.272$; $p = 0.000$). The results obtained from the study have confirmed the validity of hypothesis H3. The magnitude f^2 , which was obtained through algorithmic calculations, was measured to be 0.17.

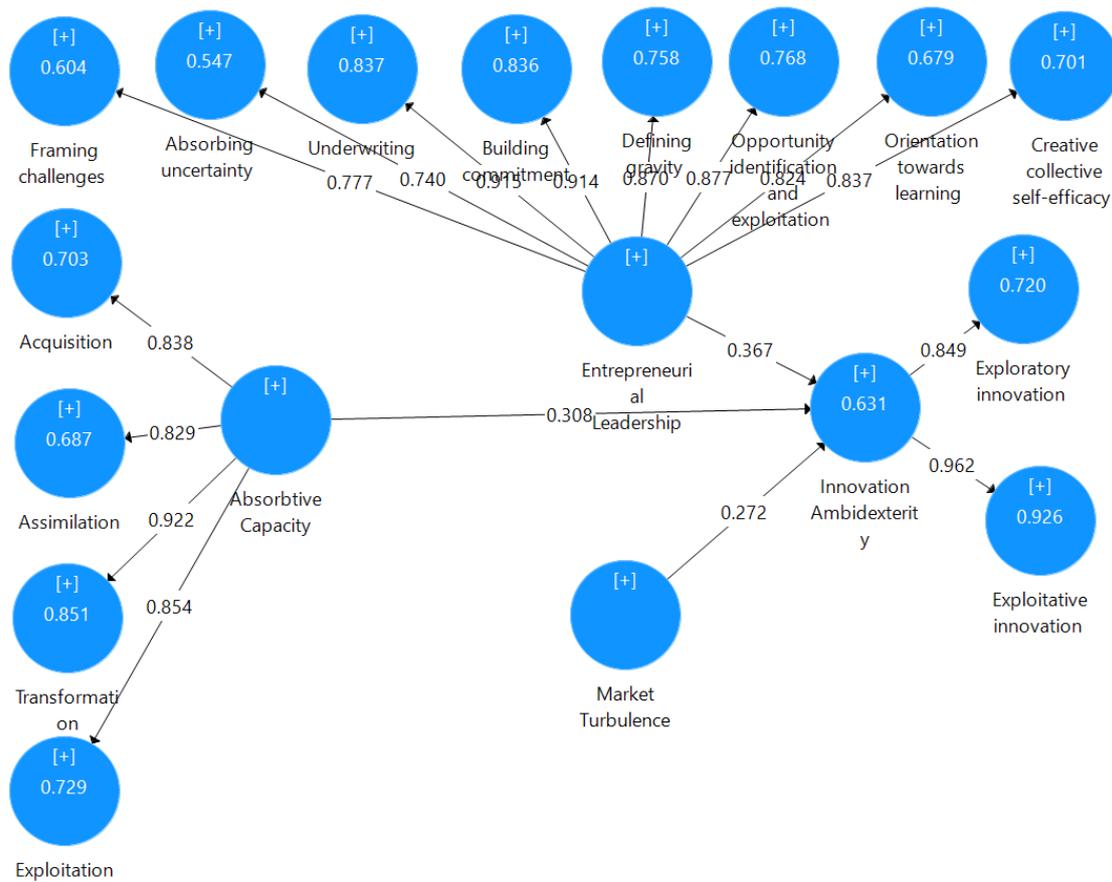


Figure 1. Direct effect of the model

Discussion

The present study effectively validated the correlation between absorptive capacity and innovation ambidexterity strategies in SMEs. The findings of this investigation validate the outcomes of prior research conducted by previous scholars (Božič & Dimovski, 2019; Cabeza-Pullés et al., 2020; Müller et al., 2020; Pangarso et al., 2020). In SMEs, the relatively uncomplicated organizational structure enables them to exhibit greater agility in acquiring external information. The aforementioned data is assimilated and subsequently converted into a type of innovation strategy that can be categorized as either exploitative or exploratory in nature. According to Cabeza-Pullés et al. (2020), the dynamics of teamwork SMEs exhibit a greater degree of flexibility and supportiveness in order to facilitate the creative process. In the context SMEs, organizations that possess a greater degree of absorptive capacity demonstrate an enhanced capability to anticipate forthcoming innovations. Furthermore, it is worth noting that absorptive capacity within SMEs can serve as a means to mitigate overreliance on specific innovation processes, such as those driven by leaders or founders (Božič & Dimovski, 2019). This facilitates the application of external knowledge by SMEs and its conversion into innovative outcomes. Nevertheless, the absorptive capacity exhibited by SMEs remains characterized by a rudimentary framework and primarily emphasizes the development of latent absorptive capacity (Müller et al., 2020). However, this study has yet to explore the specific preferences of SMEs regarding exploitative or exploratory innovation strategies.

This study successfully demonstrated the moderating role of absorptive capacity on the relationship between innovation ambidexterity and its outcomes. The findings of this study substantiate the pivotal role played by leaders or managers in facilitating the process of innovation within the organization. According to Malibari and Bajaba (2022), entrepreneurial leadership is

instrumental in fostering a favourable atmosphere for the creative process, promoting intellectual agility, and encouraging innovative behaviour among employees. According to Hoang et al. (2022), within SMEs characterized by a straightforward organizational structure, entrepreneurial leadership assumes a pivotal position as a trusted exemplar responsible for formulating an appropriate innovation strategy for the organization. Leaders who possess a clear and forward-thinking vision will effectively communicate with all members of their workforce and implement organizational restructuring strategies in order to enhance the organization's dynamic capabilities in navigating the challenges posed by the disruptive era. According to Utoyo et al. (2020), the enhanced capability will result in the emergence of revolutionary concepts and novel services or enhancements to current advancements. The present study has also effectively demonstrated the moderating role of market turbulence in influencing the impact of absorptive capacity on innovation ambidexterity within SMEs. The findings presented in this study provide further support to previous research conducted on related subjects (Le & Do, 2023; Le & Le, 2023b; Pudjiarti & Priagung Hutomo, 2020; Shehzad et al., 2022). This study presents theoretical justifications and empirical findings regarding the influence of moderation effects in the context of market turbulence. It emphasizes the role of absorptive capacity in SMEs and how it interacts with market turbulence to impact exploitative and exploratory innovation strategies.

Conclusion

This study highlights the significant and pertinent role of market turbulence in shaping the innovation process, which necessitates careful consideration by leaders or managers when formulating their innovation strategies. The acquisition and assimilation of external knowledge by the company plays a crucial role in shaping its innovation strategy. In SMEs, the selection of innovation strategies, encompassing both exploitative and exploratory approaches, is imperative.

SMEs are compelled to enhance the capacity of their internal teams to effectively leverage external knowledge, as a result of resource limitations. The facilitative role of leaders in fostering the innovation process is a significant determinant. In situations characterized by ambiguity, it is imperative for organizational leaders to effectively assume their role as directors in order to facilitate the smooth and efficient operation of innovation processes. Moreover, it has been observed that market turbulence conditions have the potential to enhance the innovation process, particularly for SMEs.

Further development of this research can be achieved through an investigation into the role played by potential absorptive capacity and realized absorptive capacity within SMEs. In addition, in order to enhance the company's competitiveness, it is imperative to examine the capacity of SMEs to generate radical or incremental product or service innovations amidst resource scarcity challenges.

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