

Influence Of Organizational Learning On Innovation Performance With The Intermediate Role Of Organizational Agility: The Case Of Vietnam

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Abstract:

Learning is the key for people to become different, have an identity and expand their creativity and dedication. That is also the key for a business to continuously grow in capacity, contributing to the overall development of the organization. The goal of this article is to explore the impact of organizational learning and organizational agility on innovation performance. Create cutting-edge solutions and improve corporate innovation performance by enhancing organizational learning and organizational agility across the business. In particular, businesses need to transform strongly to promptly adapt to market changes. The article uses quantitative research methods with the sample size of 295 enterprises in Vietnam. The results show that organizational learning and the general aspect of organizational agility measured in the study: sensing agility and responding agility have a positive impact on innovation performance. Thereby, suggestions to improve organizational agility and innovation performance basing on enhancing the positive impact of organizational learning are given.

Keywords: Innovation performance, organizational agility, organizational learning.

1. INTRODUCTION

In today's world, every organization strives to enhance its performance to remain competitive and responsive to the dynamic environment. The objectives of enhancing the indicated business performance might be interpreted as increased financial performance or increased innovation performance, such as creating new products or applying cutting-edge technologies inside the firm. However, enhancing business efficiency in the current context is not simple, given the numerous fluctuations in the environment, making it challenging for organizations to grasp and identify opportunities and threats. Thus, it is imperative that businesses must have effective change management and adaptive capabilities. The positive interplay between a business's adaptability and the enhancement of organizational performance has been revealed in various studies (Mu, 2015; Sarta, Durand, & Vergne, 2021; Shahrabi, 2012)

To enhance the adaptation of businesses to a hypercompetitive environment, effective tools are emphasized. These tools not only facilitate organizations in terms of leveraging or creating

opportunities induced by environmental volatility but also allow businesses to perceive the transitions in customer preferences more swiftly than their competitors (Shahrabi, 2012)

One of the organization's main goals is to make it agile and enhance its adaptability. Organizational agility is interpreted as the capability of organizations to quickly recognize, identify, and sense the shifts that occur in a turbulent environment and then swiftly respond to them (Erande & Verma, 2008; Tallon & Pinsonneault, 2011). There are a variety of studies that have unveiled the benefits that organizational agility brings to organizational performance (Cegarra-Navarro, Soto-Acosta, & Wensley, 2016; Felipe, Leidner, Roldán, & Leal-Rodríguez, 2020; Nafei, 2016; Panda, 2022; Roberts & Grover, 2012)

When examining what elements influence organizational agility, a number of studies have revealed that knowledge plays an essential role in enhancing organizational agility (Bahrami, Kiani, Montazeralfaraj, Zadeh, & Zadeh, 2016; Cegarra-Navarro et al., 2016; Shahrabi, 2012). The knowledge-based views have identified the importance of knowledge creation, acquisition, and application to performance, which can be developed through organizational learning capability (Robert M Grant, 1996; Spender, 1996). Organizational learning refers to the way that organizations create, assimilate, interpret, and restore information within an organization (Schulz, 2001; Tippins & Sohi, 2003).

Although extensive literatures have uncovered the interdependency between organizational learning and organizational performance, very few studies indicate the mediating role of the organizational agility variable in this relationship. This creates a research gap that this study will attempt to address. Therefore, this study will strive to fill the gap by detecting how organizational learning affects organizational performance in the presence of organizational agility.

2. CONCEPTUAL FRAMEWORK

2.1. Organizational Learning (OL)

One of the key characteristics of the talk about the advancement of the socio-economic environment of commerce in progressing mechanical economies at the conclusion of the twentieth century is the dynamic accentuation of a knowledge-centered culture in which “learning is central to the survival and development of all organizations”(Lundberg, 1995). Within the 1980s, acknowledgment of the significance of learning as the premise for organizational improvement and competitive advantage found support among, not as it were key administration masterminds, but too industrialists. In today's competitive and globalized business environment, organizations face the constant challenge of advancing and learning in order to succeed. Therefore, both individual and organizational development are important management goals. The aim is to create and implement working conditions and structures that enhance employees' ability and willingness to learn, thereby facilitating the organization's adaptation and change process. Organizational learning is widely recognized as a pivotal factor in the success of enterprises. According to (Bapuji & Crossan, 2004), Organizational learning plays a crucial role in unlocking insights and improving the way organizations function; Companies that learn speedier and utilize information more viably tend to be pioneers (P. A.

C. Smith, 2008); In unpredictable situations, OL holds great importance for organizations as it enables them to respond faster to unexpected circumstances as compared to their rivals (Garvin, Edmondson, & Gino, 2008).

There are a number of reasons why research on learning organizations is currently so fashionable.

First, the concept of the learning organization is increasingly popular among large organizations as they strive to develop structures and systems that are more adaptable and responsive to change. For example, psychologists consider learning to be the highest form of adaptation, enhancing the ability to survive in changing environments, and many other approaches also emphasize the need for adaptation. Learning is seen as a purposeful task aimed at maintaining and improving competitiveness, productivity, and innovation in uncertain technological and market circumstances. People increasingly appreciate that learning is the key to competitiveness (Garratt, 1987).

Second, organizational learning results in technological innovation, process improvement, and product enhancement (Gomes & Wojahn, 2017). In fact, organizational learning leads to higher levels of competitiveness and it is considered a panacea for long-term organizational success and growth. It has been shown that there is a positive relationship between an organization's level of teaching difficulty and organizational learning. That means the greater the changes in a business organization's external environment, the greater the organization's need for learning. Without organizational learning, the organization will remain stagnant and unable to adjust to changes in the environment. According to Senge (2006), knowledge creation and learning within organizations can create a new approach to continuous improvement leading to enhanced organizational performance. One of the reasons why organizational learning is important is because organizations with low levels of organizational learning will not be able to adjust to environmental changes that result from technological innovation. This will always limit the organization's ability to remain competitive and it will cause it to go bankrupt soon. Thus, one of the strategic values of an organization lies in becoming a "learning organization".

The OL concept was developed in the 1960s by Cyber and March (1963) who proposed the concept in the context of decision-making models. They emphasize the importance of learning through experience and the ways in which a company can adapt to changes in the environment. Cangelosi and Dill (1965) published the first study to include "organizational learning" in the title and discussion of individuals and OL. They conclude that there is a need to support inquiry to characterize, explain, test, or replace ways of constructing organizational learning. This research should focus on examining the intelligence between human and organizational learning, distinguishing variables that characterize interesting organizational learning goals and potential, and looking for Behavioral cues that can help us better anticipate and differentiate learning as it occurs. However, the field only began to expand significantly after Argyris and Schön (1997) introduced single-loop and double-loop learning methods. Later, Hedberg (1981) discussed the organization's obligation to acquire knowledge in order to survive, Shrivastava (1983) discussed learning systems, and Fiol and Lyles (1985) discussed levels of learning. practice in an organization. These foundational concepts were further developed in the 1990s, when Argote and Epple (1990) described learning curves, Weick

(1991) looked at OL frequency and form, and March (1991) studied discovery and exploitation of knowledge, Huber (1991) considered OL constructs (knowledge acquisition, information distribution, information interpretation, and organizational memory) and J. S. Brown and Duguid (1991) discussed about the relationship between OL and communities of practice and innovation. OL documentation has evolved significantly from these foundations.

According to research conducted by Crossan and Guatto (1996), the field of Organizational learning (OL) had exponential growth until the mid-1990s. This growth is reflected in the number of articles published writing on this topic. To provide further evidence, it can be observed that in 1990 only 4 articles on OL were published, while in 2002 the number of articles on this topic increased to 98. The dramatic increase in the number of articles published on this topic between 1990 and 2002 suggests that growth in OL research did not decline after the mid-1990s. Instead, it continued. maintain an upward trajectory. The fact that so many articles were published in OL in 2002 alone shows that it continues to be an area of interest to researchers and scholars.

In the existing literature, a distinction is made between two closely related concepts - the learning organization and the learning organization. Although these two terms sound similar, they represent different aspects of learning within an organization.

The first difference between the two lies in their respective definitions. A learning organization is often defined as an organizational structure designed to facilitate and promote learning. This can involve creating a culture of learning, promoting knowledge sharing, and creating development opportunities for employees. On the other hand, organizational learning refers to the learning process that takes place within an organization, regardless of its structure or design. "Organizational learning can be a concept used to describe certain types of movements made in an organization while organizational learning refers to a specific type of organization in and of itself" (Elkjaer, 1999; Finger & Brand, 1999; Tsang, 1997).

A key difference between these two concepts is that organizational learning is often considered a shape or form of organization, whereas organizational learning is an activity or a set of (learning) forms. can happen in organizations. This means that organizational learning is a deliberate attempt to structure an organization in a way that promotes learning, while organizational learning can occur spontaneously and organically. in any organization.

Furthermore, organizational learning requires conscious and active efforts from the organization's leaders to promote a learning culture, while organizational learning can occur without any deliberate effort. This is because organizational learning is a natural by-product of the work the organization performs and the experience employees gain in their roles.

Another difference is that, while the literature on learning organizations focuses on their development through a prescriptive approach, recent literature has questioned the practical and scientific value of it, even suggesting that it should be eliminated altogether. In contrast, the organizational learning literature has adopted a descriptive approach, analyzing how organizations learn. However, this material does not always translate into actual consulting or tool development activities. It is possible for both organizational learning and the learning organization to coexist and complement each other. However, in order to achieve success as a

learning organization, it is crucial to establish a comprehensive learning cycle and acknowledge that the process may require a significant amount of time (Gorelick, 2005).

This article only focuses on clarifying the term organizational learning. One of the pioneering empirical studies of the phenomenon of OL was performed by Cyber and March (1963) “Organizations learn: to assume that organizations go through the same processes of learning as do individual human beings seems unnecessarily naive, but organizations exhibit (as do other social institutions) adaptive behavior over time. Just as adaptations at the individual level depend upon phenomena of human physiology, organizational adaptation uses individual members of the organization as instruments. However, we believe it is possible to deal with adaptation at the aggregate level of the organization, in the same sense and for the same reasons that it is possible to deal with the concept of organizational decision making” (p.123).

Organizational learning is known as “detection and correction of error” whereby a blunder is characterized as the disparity between what individuals in an organizational setting try to attain and what they accomplish (March & Olsen, 1975) In the 1980s, the definition of OL in general did not change too much, and prominent among them were Fiol and Lyles (1985) who said that The term "organizational learning" refers to the process of an organization gaining new knowledge based on its past experiences and making changes to its knowledge base accordingly. In the late 90s and early 2000s, many terms with new perspectives on organizational learning as Preskill and Torres (1999); Torres, Preskill, and Piontek (1996) indicated that organizational learning could be a ceaseless prepare of development and advancement that:

- (a) employments data or input around both processes and results (i.e., assessment discoveries) to create changes;
- (b) is coordinates with work exercises, and inside the organization's framework (e.g., its culture, frameworks and structures, administration, and communication components);
- (c) conjures the arrangement of values, states of mind, and recognitions among organizational individuals.

Or Huysman (2000) defines Organizational learning as referring to the systematic process through which a company acquires or enhances knowledge, either by creating new knowledge or by updating and improving existing knowledge; after four years Lemon and Sahota (2004) propose that organizational learning consists of a series of stages which include obtaining knowledge, transmission, and utilizing it and that these stages are intimately connected to the success of innovation.. At present, most definitions only inherit and develop from existing definitions, some typical definitions include: OL is “the process through which organizations change or modify their mental models, rules, processes or knowledge, maintaining or improving their performance” (Chiva, Ghauri, & Vidal, 2013); OL could be a source for the advancement of modern organizational information (Cheng, Niu, & Niu, 2014) and also Organizational learning is defined as a dynamically balanced connection in which organizations absorb external knowledge and further alter organizational actions in order for organizations to survive and thrive (A. Ha, Ba Phong, & Lei, 2018; T. Ha, Tran, & Ba Phong, 2022; Lei, Le, & Nguyen, 2017).

Dimensions of organizational learning

The components of organizational learning are synthesized from various academic sources, including four main attributes: knowledge acquisition, information distribution, information interpretation, and organizational memory. This conceptual framework, endorsed by scholars such as Shrivastava (1983), Fiol and Lyles (1985), Huber (1991), Slater and Narver (1995), and further expanded by de Weerd-Nederhof, Pacitti, da Silva Gomes, and Pearson (2002), Tippins and Sohi (2003), Pérez López, Manuel Montes Peón, and José Vazquez Ordás (2005), as well as Jiménez-Jiménez and Sanz-Valle (2011), emphasizes the multidimensional nature of organizational learning. Knowledge acquisition is emphasized as the process of gathering internal and external information and plays a role in laying the foundation for the learning process that takes place within the organization. Information distribution ensures the dissemination of information within the organization, facilitating the company's achievement of a state of collective intelligence. The third component, information interpretation, involves the process of processing and interpreting common information, transforming dispersed knowledge within the company into a unified whole. Finally, organizational memory pertains to the ability to retain collective knowledge, allowing for its retrieval and application in future situations.

Several studies also recognize training as a crucial component of organizational learning. Specifically, Ellis and Shpielberg (2003) argue that training is an attribute of the organizational learning mechanisms (OLM). This is also acknowledged by Kamoche and Mueller (1998), who assert that training should aim to develop an organizational culture that is closely tied to and committed to learning, directly linking knowledge management to the strategic objectives of the company. Therefore, evidence from the aforementioned studies highlights the profound impact of continuous training on organizational learning, supporting its recognition as a significant component within organizational learning.

Thus, in this study, organizational learning is considered to conclude five components including knowledge acquisition, information distribution, training, information interpretation, and organizational memory.

2.2. Organizational Agility (OA)

When delving into the theory of organizational agility, there are diverse opinions regarding the origin of this concept. Some studies propose that the term "Organizational agility" was initially introduced in the 21st Century Manufacturing Enterprise Strategy report (Nagel & Dove, 1998), published by the Iacocca Institute at Lehigh University (USA). The report underscores the significance of transitioning the management model from mass production to agile manufacturing to reclaim the leading position for U.S. manufacturing enterprises. Whereas, some studies present a different perspective suggesting that the definition of agility in the context of business was first given in 1982 and was describe as "the capacity to react quickly to rapidly changing circumstances" (J. L. Brown & Agnew, 1982). Although this is considered the first statement in the definition of organizational agility, it is the foundational definition that defines the present organizational agility concept: Organizational agility (OA) refers to a

company's ability to thrive in an ever-changing environment (Vinodh, Aravindraj, Pushkar, & Kishore, 2012).

However, when delving deeper into the theoretical background, it becomes clear that there are several scholarly papers providing distinct definitions of organizational agility from various perspectives. Notably, there are two prominent perspectives on the definition of organizational agility, from the perspective of "paradigm" and from the perspective of "performance capability" (Walter, 2021). Besides, other existing articles have theorized organizational agility under the lens of "manufacturing strategy" (Zhang & Sharifi, 2007).

Specifically, Sharp, Irani, and Desai (1999) defined organizational agility as a "management philosophy" after comparing the differences between other famous management philosophies such as lean manufacturing and mass manufacturing. Some researchers have determined organizational agility as a "manufacturing paradigm" (Meade & Sarkis, 1999; Narasimhan, Swink, & Kim, 2006; Vázquez-Bustelo, Avella, & Fernández, 2007). Research articles addressing this concept of organizational agility will typically focus on the "reconfiguration" of enterprises in response to environmental changes. Specifically, some studies have defined the concept of Organizational Agility (OA) through the "paradigm" lens as a model for establishing an information infrastructure and designing an enterprise structure that facilitates the integration of business resources, such as human resources, technology, and organization into a cohesive unit. This aims to make the enterprise more responsive, flexible, and capable of rapidly reacting to changes in the business environment (Vázquez-Bustelo et al., 2007). Further, according to Narasimhan et al. (2006) organizational agility is a 'system of practices' that encompasses a company's philosophy, values, and culture when seen as a manufacturing paradigm. However, understanding organizational agility from this perspective would result in great confusion, making it difficult for managers to fully grasp the notion of organizational agility (Narasimhan et al., 2006).

The opposite of the above definition is that considering organizational agility as a "capability", performance capabilities are conceptually different from practices (Narasimhan et al., 2006). There have been various attempts to study organizational agility in relation to variables such as IT capability (Overby, Bharadwaj, & Sambamurthy, 2006), knowledge creation ability (Alshanty & Emeagwali, 2019), informational capability (Irfan, Wang, & Akhtar, 2019), and organizational learning capability (Hassan, Arshad, Mustapha, & Jaafar, 2013) to boost the firm's performance. Organizational agility has been viewed as either a performance capability (Cho, Jung, & Kim, 1996; Sambamurthy, Bharadwaj, & Grover, 2003), a strategic capability (Chakravarty, Grewal, & Sambamurthy, 2013), an operational capability (Lu & Ramamurthy, 2011), or a dynamic capability (Bessant, Francis, Meredith, Kaplinsky, & Brown, 2001). Many studies have defined organizational agility as dynamic agility (Panda & Rath, 2017) that enables firms to sense and respond to the dynamic environment and capture opportunities. The dynamic capability theory regards organizational agility as the ability to adapt and flexibly react to ever-changing markets (Sherehiy, Karwowski, & Layer, 2007; D. J. Teece, 2007). Earlier studies have identified organizational agility as organizational adaptability and organizational flexibility (Christopher & Towill, 2001), which highlighted the firm's ability to detect and respond to changes and capture opportunities. Agreeing with previous research,

Panda and Rath (2017), viewed organizational agility as a higher-order dynamic capability to help firms detect and respond to changes in customers' preferences, regulations, and competitors' moves. Irfan et al. (2019) also defined organizational agility as the capability to sense and react to the market environment while taking advantage of their coordination with suppliers, stakeholders, and internal operations (Lu & Ramamurthy, 2011). In the digital workplace, agility has become a prominent facilitator of firms' performance through maintaining their competitive advantage, product value, and services (Sambamurthy et al., 2003).

Organizational agility is often enabled by the adoption of technology (Panda & Rath, 2017; Sambamurthy et al., 2003; Zain, Rose, Abdullah, & Masrom, 2005) to maintain the firm's competitive advantage and facilitate its performance. IT capability and IT infrastructure boost organizational agility and support strategic decisions by creating a smooth and wide channel of knowledge within firms (Overby et al., 2006). Moreover, the alignment of organizational agility, knowledge, and other capabilities such as IT capability (Overby et al., 2006), business functional capability (Panda & Rath, 2017), and strategic capability (Sambamurthy et al., 2003) will further increase the firm's performance.

Dimensions of organizational agility

Various research publications have presented different techniques to point out the components of organizational agility. Four dimensions have been categorized as "underlying principles" or competitive foundations by Goldman, Nagel, and Preiss (1995). The first is the control dimension, "mastering change and uncertainty," which assumes a dynamic, demanding environment that necessitates change. Another dimension, known as "customer enrichment" (or output dimension), requires businesses to quickly provide high-quality, tailored items in response to client demand. The realization of organizational agility through the integration of technology and HR through an adaptable organizational structure, an appropriate management style, and internal and external cooperation is represented by the third and fourth dimensions, "cooperating to enhance competitiveness" (the input dimension) and "leveraging the impact of people and information" (the mechanism dimension) (Iacocca, 1991). Sharp et al. (1999) considered the three main dimensions of organizational agility regarding competitive foundations such as: constantly changing environment, quick reaction with high-quality, personalized goods, and social responsibility.

Another approach to identifying the dimensions of organizational agility is that several studies have been based on the type of organizational agility. Sambamurthy et al. (2003) classified organizational agility by: customer agility, partnering agility, and operational agility. Agile organizations need to be capable of adjusting their strategy with reference to operations, business alliances, and customer response (Tallon & Pinsonneault, 2011). Based on this statement, Tallon and Pinsonneault (2011) have identified three dimensions of organizational agility including: agility in operations, agility in business partnerships, and agility in customer response. Regarding to the measurement of organizational agility, Overby et al. (2006) have indicated that organizational agility "should not be measured directly but as a function of sensing and responding capability to further highlight the alignment within enterprises." This means organizational agility comprises both sensing agility and responding agility. Previous

studies also broke organizational agility into sensing and responding agility (R. Dove, 2002; Panda & Rath, 2017; Trinh Phuong, Molla, & Peszynski, 2012). While sensing agility is the ability to use knowledge to capture changes in customers' tastes, governmental regulations, competitors actions, and other external factors (Rick Dove, 2005), responding agility is the ability to respond to these changes with innovative moves or by changing existing businesses (Panda & Rath, 2017). Enabling both sensing and responding agility through increasing firms' knowledge and IT adoption can further enable organizational agility (Overby et al., 2006; Sambamurthy et al., 2003). Through the analysis of these two dimensions: sensing agility and responding agility- it can be realized that there is a correlation between these two dimensions and the way the organization learns. Therefore, we will analyze the relationship of organizational learning with these two dimensions.

Sensing agility

Sensing agility is the ability of an organization to quickly assess and keep track of occurrences and changes in the environment, such as obsolescence of products, the strategy of rivals, and the emergence of technology (Park, 2011). Sensing helps the business and the supply chain respond to organizational agility and efficiency by utilizing the skills that provide better market knowledge and sharing market information among different corporate departments, suppliers, and consumers (Hyun, Park, Kamioka, & Chang, 2023). A lot of inspection, learning, and interpretation go into spotting new prospects (D. J. Teece, 2007). When a company detects a chance for innovation or competitive action, it has to take advantage of it by using its current services or processes (Jayachandran, Hewett, & Kaufman, 2004; D. J. Teece, 2007).

Responding agility

Responding agility is the ability of a business to react quickly after recognizing opportunities and challenges created by a changing environment. Regarding to capability of agile responding to customer preferences, responding with agility will be improved by the customer knowledge process, which is likely to raise the degree of expertise used and quicken response times (Jayachandran et al., 2004). Besides, there is a positive correlation between responding swiftly to customers and business performance (Jayachandran et al., 2004).

2.3. Innovation performance

Since early days, innovation performance has received a lot of attention as a dimension of organizational performance. (Venkatraman & Ramanujam, 1986) defined innovation performance as the accomplishment of different internal and external goals, including gaining competitive advantage, reducing production costs, creating customer values, improving production efficacy, and the transformation of existing business models. Therefore, this dimension should be refined alongside financial and business performance. Researchers proposed that innovation performance, or the ability to sense and adjust to changes, can also be used to measure and develop organizational learning (Prieto & Revilla, 2006). Innovation was defined as the ability to generate ideas from integrating internal business resources and successfully apply these ideas into the current business model (Dodgson, Gann, & Phillips, 2014). Innovativeness encourages firms to strive for differentiation by adjusting the existing

production process or coming up with new business ideas, products, and services (Baregheh, Rowley, & Sambrook, 2009).

Schumpeter (1939) proposed an assessment model for innovation performance, which included innovation, new production process, new supply source, new business venture, and new business model. Other researchers, however, discovered different measurements of innovation performance, namely sales and profits, market shares, competitive advantage, cost reduction, customer value creation, customer satisfaction, and increased organizational efficiency (Adams, Bessant, & Phelps, 2006; Griffin & Page, 1993; Manion & Cherion, 2009). K. Smith (2006) also agreed that market shares of new products and services could be deemed an accurate index to measure innovation performance. Besides, firms also need to take into account the influence of external factors on their innovation performance. The changes in technological trends, legal laws, resources efficiency, etc. also have a certain impact on the development and sustainability of innovation performance.

3. HYPOTHESES

Organizational learning affects sensing agility

The two main dimensions of organizational agility, sensing and responding to the environment needs to be consistently nurtured and improved. This is where organizational learning becomes critical for organizational agility. Because the business environment is continuously changing, sensing skills must be constantly enhanced to remain sufficient, which is the essence of organizational agility in supporting the sensing dimension of strategic agility. Social technology can help to improve these learning processes by allowing people to exchange knowledge and stories with others from different communities, compare experiences with others, develop new relationships, and form groups for various objectives.

Adapting to a competitive environment necessitates the use of effective instruments for success, such as OA and OL (Shahrabi, 2012), since the company can discover opportunities through its capacity to learn and gain information (D. J. Teece, 2007). In other words, OL and OA are interconnected and play an important role in improving performance, and businesses that have both learning and agility skills can establish a competitive edge (Mavengere & Tikkamäki, 2013). Leadership agility accomplishes learning by supporting knowledge management techniques that address collective learning accomplishment (McKenzie & Aitken, 2012); leadership agility achieves learning by supporting knowledge management practices that address collective learning achievement (McKenzie & Aitken, 2012). Furthermore, because agile companies are constantly ready to learn (Shahrabi, 2012), OA is essential to establish and preserve OL expertise (Dyer & Shafer, 1998). OA promotes OL, in that as the organization senses to the environmental pressures so it learns from the experience and thus develops OL (Mavengere & Tikkamäki, 2013).

Information technology (IT) is a crucial feature and an integral component in the contemporary practice of knowledge management in a knowledge economic era (Sher & Lee, 2004). Furthermore, IT is a significant driver of strategy transformation and organizational restructuring. By making corporate-wide information more available, IT enables the

integration of business processes at all levels of an organization (Mouschovias & Morton, 1991). Changes in IT systems, according to (Ostroff, 1999), should complement the transition to a horizontal management style. IT alignment to enable changes in core processes is thus crucial to organizational process alignment adoption. Strategic alignment is also linked to improved organizational performance (Zairi, 1997).

Some authors point out that the "alignment" between information technology and the strategic thinking of a company's managers is created when knowledge is shared and managers recognize the role and importance of IT. "Alignment" is likened by the author to "Sensing capability. Thereby, Managers can quickly recognize market opportunities and challenges and build consensus in finding the best solution to face that change.

Thus, we propose that organizational learning have a direct positive impact on sensing agility:

Hypothesis 1a. Knowledge acquisition has a positive impact on sensing agility.

Hypothesis 1b. Information distribution has a positive impact on sensing agility.

Hypothesis 1c. Training has a positive impact on sensing agility.

Hypothesis 1d. Information interpretation has a positive impact on sensing agility.

Hypothesis 1e. Organizational memory has a positive impact on sensing agility.

Organizational learning affects responding agility

Organizational agility is fundamentally tied to the pivotal dimension of responding, representing an organization's ability to navigate swiftly and effectively in response to dynamic market changes, seize emerging opportunities, and manage crises without undue resource expenditure (Naylor, Naim, & Berry, 1999). This responsiveness is not only central to organizational agility but also extends to customer agility, as identified by (Zaheer & Zaheer, 1997), who distinguish between customer sensing capability and customer responding capability. The latter underscores the organization's capacity to meet evolving customer needs and expectations promptly.

Scholarly contributions by (Haeckel, 1999), (Nazir & Pinsonneault, 2012), (Roberts & Grover, 2012), and (Zaheer & Zaheer, 1997) collectively underscore the critical role of responding capability in ensuring organizational success, particularly in turbulent and rapidly changing environments. (R. Dove, 2002) and (Overby et al., 2006) further contribute to this understanding, defining responding as the organization's swift and accurate action upon identified opportunities or threats.

The strategic importance of responding as a dimension of organizational agility cannot be overstated. Acknowledging and harnessing this capability is essential for fostering adaptability, resilience, and sustained performance in the dynamic and competitive business landscape of today. As organizations grapple with unprecedented challenges and opportunities, the ability to respond effectively emerges as a key determinant of long-term success, resonating with the insights provided by these influential scholars.

Organizational agility (OA) plays a pivotal role in shaping an organization's competitive advantage by fostering knowledge management (KM) and sustainable knowledge transfer

capabilities (N. Saha, Gregar, A. & Sáha, 2017). The attributes and priorities associated with OA positively influence organizational competitiveness by stimulating Knowledge Skills & Abilities (KSAs), thereby promoting innovative capability and business growth (N. Saha, Sáha, Gregar, & Sáha, 2020). Leadership agility further contributes to learning achievements by supporting knowledge management practices and collective learning efforts (McKenzie & Aitken, 2012). Additionally, the dimensions of OA are integral to organizational learning (OL) competency, as agile organizations are inherently prepared to learn and adapt (Shahrabi, 2012). As highlighted by (Cetindamar Kozanoglu & Abedin, 2021), OA's dimensions underscore the centrality of learning in agility. The reciprocal relationship between OL and OA is evident, as organizations that actively sense and respond to environmental pressures foster a culture of continuous learning and development (Mavengere & Tikkamäki, 2013). The improvement of organizational learning abilities, according to (Bahrami et al., 2016), is crucial for an organization's agility and, by extension, its survival. The two main dimensions of OA, sensing, and responding, rely on consistent nurturing and improvement, emphasizing the essential role of organizational learning in supporting both dimensions of strategic agility. Social technologies, as suggested by Mavengere and Tikkamäki (2013), further enhance learning processes by facilitating information sharing, experience comparison, relationship building, and group formation for diverse purposes.

There are observations that suggest that the majority of important knowledge areas come from customer information and competitive rivals. Additionally, knowledge information plays a significant role in making strategic decisions and daily operational activities of a company (Welsch, 2000). Therefore, the faster a business captures information, cues, and knowledge from customers and competitors, the higher its ability to identify changes in the environment and respond with solutions compared to other companies (Welsch, 2000).

Thus, we propose that organizational learning have a direct positive impact on responding agility:

Hypothesis 2a. Knowledge acquisition has a positive impact on responding agility.

Hypothesis 2b. Information distribution has a positive impact on responding agility.

Hypothesis 2c. Training has a positive impact on responding agility.

Hypothesis 2d. Information interpretation has a positive impact on responding agility.

Hypothesis 2e. Organizational memory has a positive impact on responding agility.

Organizational learning affects innovation performance

Research on the important role of organizational learning in enhancing the innovation capability of businesses has shown rapid development (Han, Kim, & Srivastava, 1998; Hult, Hurley, & Knight, 2004). Studies consistently indicate the impact of organizational learning attributes on innovation outcomes, including the ability to develop new products, improve existing products, or integrate new technologies into process of enterprise (Damanpour, 1991; Egan, Yang, & Bartlett, 2004; Rothaermel & Deeds, 2004). Specifically, Baker and Sinkula (1999) has indicated that companies which facilitate dynamically learning activities can sense and adopt new technologies faster than other competitors. Moreover, organizational innovation

relies on the transformation and utilization of existing knowledge, which necessitates the sharing of information and knowledge among employees. Robert M. Grant (2013) argues that innovation occurs when employees share their knowledge within the organization, leading to the generation of new and collective insights. In essence, organizational learning facilitates the development, acquisition, transformation, and exploitation of new knowledge that ultimately enhances organizational innovation. The relationship between organizational learning and innovation outcomes has been recognized through numerous studies, which have shown that cultures that promote organizational learning enhance performance at the individual, group, and organizational levels, thereby improving innovation outcomes (Egan et al., 2004). Besides, García-Morales, Ruiz-Moreno, and Llorens-Montes (2007) highlight that organizational learning nurtures creativity, fosters new ideas and knowledge, and enhances organizational intelligence, thus providing a foundation for innovation. Consequently, we propose that organizational learning has a positive influence on innovation performance.

Hypothesis 3a. Knowledge acquisition has a positive impact on innovation performance.

Hypothesis 3b. Information distribution has a positive impact on innovation performance.

Hypothesis 3c. Training has a positive impact on innovation performance.

Hypothesis 3d. Information interpretation has a positive impact on innovation performance.

Hypothesis 3e. Organizational memory has a positive impact on innovation performance.

Organizational agility affects innovation performance

Organizational Agility (OA) stands out as a critical determinant of organizational performance. Mavengere and Tikkamäki (2013) emphasize the pivotal interrelated role played by OA in enhancing overall organizational performance and in the development of a competitive advantage. Improved agility enables companies to elevate productivity, adapt to threats, and introduce innovations, resulting in heightened firm performance. In environments marked by volatility and unpredictability, OA becomes essential for understanding and responding to threats and opportunities faster than competitors, thereby enhancing preparedness for responsive actions. D. Teece, Peteraf, and Leih (2016) underline OA's significance in high-uncertainty environments by providing crucial sensing, seizing, and transforming capabilities necessary for sustained growth and performance. Sambamurthy et al. (2003) and Mikalef and Pateli (2017) elaborate on the multifaceted impact of OA, encompassing value creation, cost-effectiveness, customer retention, and strategic partnerships for innovation. The proactive nature of customer agility, as highlighted by (Roberts & Grover, 2012), allows organizations to creatively respond to customer-based opportunities, ultimately contributing to enhanced profits, competitive advantage, and industry positioning. Consequently, we propose that Organizational Agility has an impact on Organizational Performance.

Hypothesis 4. Sensing agility has a direct positive impact on innovation performance.

Hypothesis 5. Responding agility has a direct positive impact on innovation performance.

4. RESEARCH METHODOLOGY

The target population of this study is enterprises in Vietnam. A questionnaire on the influence of learning organization on organizational agility and innovation performance was designed and sent to managers of enterprises in Vietnam. Sources of the measures are in Table 1.

Table 1. Measures

Variable	Code	Number of items	Sources
Knowledge acquisition	KA	5	Liao and Wu (2009)
Information distribution	ID	4	Flores, Zheng, Rau, and Thomas (2012)
Training	TR	5	Ellis and Shpielberg (2003)
Information interpretation	II	4	Flores et al. (2012)
Organizational memory	OM	5	Pérez López et al. (2005)
Sensing agility	SA	3	Panda and Rath (2017)
Responding agility	RA	3	Panda and Rath (2017)
Innovation performance	IP	8	Prajogo and Ahmed (2006); Chong, Chan, Ooi, and Sim (2011)

Source: Compiled by the authors

Each item was assessed through self-reported responses, utilizing a Likert scale ranging from 1 to 5. The survey was structured into two primary parts: the initial segment gathered basic details about the participants, while the latter segment focused on obtaining insights from the surveyed businesses regarding their practices in organizational learning, agility, and their performance in innovation. The data collection period was from December 2023 to February 2024. Surveys were sent directly or online to the respondents. The final result was that there were 295 completed questionnaires with sufficient information for analysis. SPSS 20.0 and Smart PLS 3.2.8 software were used for data analysis.

5. RESULTS

Demographic characteristics of the sample

Regarding business types, the majority of companies participating in the survey were, in descending order, enterprises in trading and service industry (37.6%) and enterprises in manufacturing sector (25.4%). Enterprises in transportation industry, travel, and financial investment had an average proportion of 13.2% and 10.8%, respectively. Only 5.4% of the total surveyed enterprises were in the information technology industry, and 7.5% were other types of businesses. This is relatively consistent with the reality of the business ratios in

Vietnam during the year 2022. The businesses are primarily concentrated in the Central and Northern regions (corresponding to 65.1% and 32.3% of the total number of businesses, respectively). Only 2.7% of businesses are in the Southern region, equivalent to 8 valid survey responses. This may also be explained by the difficulties in contacting and accessing businesses in the Southern region.

Regression analysis

The scales and reliability of the observed variables were assessed using Cronbach's Alpha coefficient and Composite reliability rho_c, following the recommendations of Hair et al. (2017). Table 2 provides the results of the Cronbach's Alpha reliability analysis for the following scales:

Table 2. Construct reliability and validity

	Cronbach's Alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
ID	.924	.926	.946	.815
II	.917	.923	.942	.801
KA	.922	.923	.945	.812
OM	.850	.865	.897	.684
IP	.900	.904	.920	.591
RA	.830	.833	.898	.746
SA	.836	.837	.902	.753
TR	.910	.910	.937	.788

Source: Results of the survey

The results indicate that all the factor structures have good reliability as both the Cronbach's alpha coefficient and the Composite reliability (rho_c) are greater than 0.7, and notably, all the coefficients for the variables are from 0.83 upwards. Also, from these results, we can see that the Composite reliability (rho_c) tends to be higher than the Cronbach's Alpha reliability.

The significance of the impact coefficient of a relationship (path coefficient) depends on its standard error, which is obtained through the bootstrapping method on SmartPLS 4. The bootstrap standard error allows for the calculation of the t-value and the p-value for all path coefficients in the structural model.

Table 3. T-statistics for path coefficients

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
KA -> SA	.223	.225	.064	3.480	.001

ID -> SA	.179	.178	.059	3.018	.003
TR -> SA	.181	.182	.065	2.800	.005
II -> SA	.320	.318	.068	4.700	.000
OM -> SA	.035	.036	.037	.942	.346
KA -> RA	.211	.209	.056	3.745	.000
ID -> RA	.391	.391	.060	6.519	.000
TR -> RA	.202	.201	.061	3.330	.001
II -> RA	.156	.157	.058	2.670	.008
OM -> RA	-.007	-.005	.033	.225	.822
KA -> IP	.223	.222	.054	4.130	.000
ID -> IP	.230	.230	.050	4.607	.000
TR -> IP	.146	.147	.051	2.862	.004
II -> IP	.112	.112	.048	2.314	.021
OM -> IP	.048	.048	.027	1.763	.078
SA -> IP	.181	.182	.045	4.007	.000
RA -> IP	.148	.146	.054	2.711	.007

Source: Results of the survey

The results from Table 3 indicate that the relationship OM -> IP, with a P value of 0.078, is not statistically significant, as the P value is greater than 0.05. Similarly, the relationships OM -> RA (with a P value of 0.822) and OM -> SA (with a P value of 0.346) are also not statistically significant. The other impact relationships are statistically significant since their P values are less than 0.05. The results of regression analysis is also presented in Figure 1.

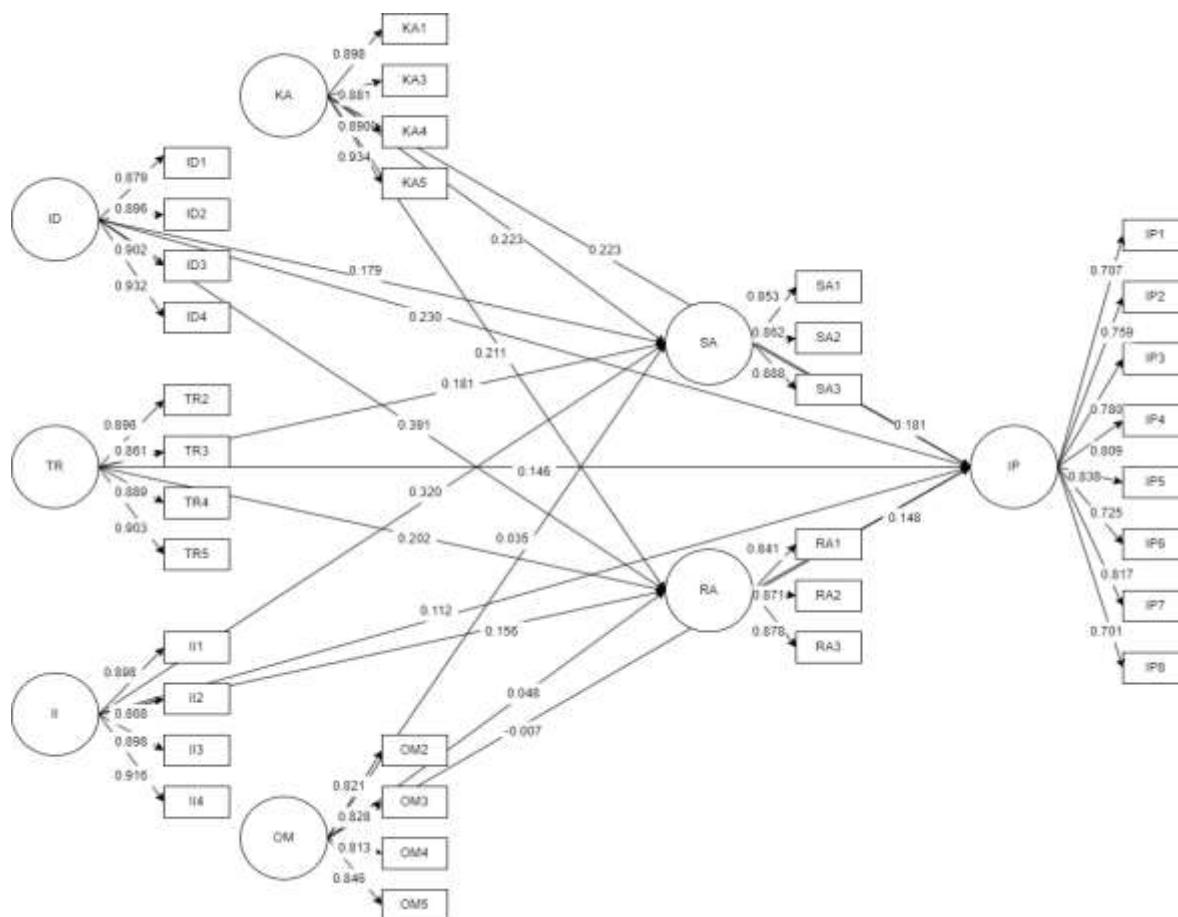


Figure 1. Relationship between organizational learning and organizational agility and innovation performance

Source: Results of the survey

From the results of Table 3, we can conclude that all the impact coefficients are positive; hence, all the impact relationships in the model are in the same direction. The order of impact strength on the variable IP (Innovation Performance) from strongest to weakest is: ID (0.230) > KA (0.223) > SA (0.181) > RA (0.148) > TR (0.146) > II (0.112). The order of impact strength on the variable SA (Sensing Agility) is: II (0.320) > KA (0.223) > TR (0.181) > ID (0.179). The order of impact strength on the variable RA (responding agility) is: ID (0.391) > KA (0.211) > TR (0.202) > II (0.148).

Based on the overall research findings, the results of testing hypotheses are as follows:

Table 4. Hypothesis testing conclusion

Hypothesis	Result
Hypothesis 1a. Knowledge acquisition has a positive impact on sensing agility.	Accepted
Hypothesis 1b. Information distribution has a positive impact on sensing agility.	Accepted

Hypothesis 1c. Training has a positive impact on sensing agility.	Accepted
Hypothesis 1d. Information interpretation has a positive impact on sensing agility.	Accepted
Hypothesis 1e. Organizational memory has a positive impact on sensing agility.	Rejected
Hypothesis 2a. Knowledge acquisition has a positive impact on responding agility.	Accepted
Hypothesis 2b. Information distribution has a positive impact on responding agility.	Accepted
Hypothesis 2c. Training has a positive impact on responding agility.	Accepted
Hypothesis 2d. Information interpretation has a positive impact on responding agility.	Accepted
Hypothesis 2e. Organizational memory has a positive impact on responding agility.	Rejected
Hypothesis 3a. Knowledge acquisition has a positive impact on innovation performance	Accepted
Hypothesis 3b. Information distribution has a positive impact on innovation performance.	Accepted
Hypothesis 3c. Training has a positive impact on innovation performance.	Accepted
Hypothesis 3d. Information interpretation has a positive impact on innovation performance.	Accepted
Hypothesis 3e. Organizational memory has a positive impact on innovation performance.	Rejected
Hypothesis 4. Sensing agility has a direct positive impact on innovation performance.	Accepted
Hypothesis 5. Responding agility has a direct positive impact on innovation performance.	Accepted

Source: Results of the survey

6. CONCLUSION AND IMPLICATIONS

This study delves into the intricate relationship between organizational learning, organizational agility, and innovation performance within the context of today's volatile market environments. Grounded in theoretical frameworks and empirical data, the research pinpoints organizational agility as a pivotal mediator that enhances the impacts of organizational learning on overall performance. Echoing the insights of scholars like Shahrabi (2012), Erande and Verma (2008) and Spender (1996), this investigation validates that four dimensions of organizational learning including knowledge acquisition, information distribution, training, information interpretation serve as a cornerstone for cultivating agility and innovation performance. There is not enough evidence of the relationship between organizational memory and organizational agility and

innovation performance. The results of the research also reveal the relationship between organizational agility and innovation performance.

Our research substantiates the notion that organizational agility, defined as the ability to swiftly recognize, interpret, and respond to market dynamics (Erande & Verma, 2008; Tallon & Pinsonneault, 2011), is integral to fostering a resilient and high-performing business model. The synergistic effect between organizational learning and agility, as explored through various dimensions, illustrates a direct correlation with improved business outcomes, underscoring the strategic imperatives highlighted by authors such as Cegarra-Navarro et al. (2016) and Panda (2022).

Furthermore, the study extends beyond theoretical postulations to offer a granular analysis of how organizational agility manifests within different facets of business operations, illustrating the practical applications of theoretical constructs in real-world scenarios. This aligns with the assertions made by Robert M Grant (1996) and D. J. Teece (2007), who advocate for the critical role of knowledge integration and application in the enhancement of organizational performance.

In essence, our research contributes to the burgeoning body of literature by not only affirming the critical interdependencies between learning, agility, and performance but also by providing actionable insights into how organizations can strategically leverage these elements to navigate the complexities of modern-day business landscapes.

From those findings, the authors make a few suggestions to improve business innovation results. Firstly, businesses should establish a robust culture emphasizing trust, shared visions, and collaborative practices. In the vein of the insights provided by scholars like Garvin et al. (2008), businesses should foster environments where information distribution is normative, thereby enhancing organizational learning and innovation. This involves dismantling traditional silos and encouraging cross-functional teams to promote a more holistic and agile response to market changes. Secondly, businesses should invest in systems and training that bolster the precision and consistency of information distribution processes. This is essential for ensuring that organizational learning translates into tangible innovation outcomes, as indicated by Robert M. Grant (2013) and Dodgson et al. (2014). Emphasize the development of IT infrastructures and platforms that facilitate seamless information exchange and collaborative problem-solving across the organization. Thirdly, businesses should align learning initiatives with organizational objectives and market demands, ensuring that learning activities are integrated into daily workflows. As proposed by scholars such as Shahrabi (2012) and McKenzie and Aitken (2012), learning should be an ongoing process that supports the organization's strategic agility, enabling businesses to swiftly adapt to and capitalize on new opportunities and technologies.

Certain limitations within this research warrant attention. Firstly, given the large number of enterprises in Vietnam, a sample size of 295 enterprises may be small to ensure high reliability of the research. Secondly, the study examines all businesses across various industries, while the impact of organizational learning on a enterprise's ability and innovation performance may differ between sectors. Thirdly, convenient sampling may limit the reliability of the research.

As a result, this study suggests that future research should apply random sampling, increase the sample size and expand the research to specific industrial domains, such as the mobile telecommunications industry, the information technology sector, universities and educational institutions, or ministries and government agencies.

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