

## **Absorptive Capacity and Organizational Performance in an Emerging Market Context: Evidence from the Banking Industry in Turkey**

### **Abstract**

Adopting the knowledge-based view (KBV), this study investigates how and when firms in emerging economies are able to generate greater performance from absorptive capacity (AC). We distinguish between two core components of AC - potential absorptive capacity (PAC) and realized absorptive capacity (RAC) - and examine their independent as well as joint effect on organizational performance. Then, we examine the moderating effects of environmental dynamism and branch network- as key boundary conditions. With data from 205 bank managers in Turkey, we show that the complementary effect of PAC and RAC on organizational performance is greater than the separate effect of each component. Moreover, the findings indicate that the combined effect becomes stronger when firms are part of a large branch network and function in a low level of environmental dynamism. We extend the KBV by demonstrating that innovation and knowledge resource development in emerging markets requires a collective effort and complementary learning processes to yield high results. Finally, we scrutinize the conditions under which firms in emerging markets can complement their learning processes efficiently to achieve greater performance.

**Keywords:** Knowledge-based view, absorptive capacity, branch network, environmental dynamism, organizational performance, emerging markets, Turkey, banking industry.

## **1. Introduction**

Absorptive capacity (AC), as a learning mechanism by which firms acquire, assimilate, transform and exploit new knowledge, is a key driver of organizational performance (Cohen and Levinthal, 1990; Wales et al., 2013; Mehreen et al., 2021). Scholars unpacked AC into two sub-dimensions: potential absorptive capacity (PAC) and realized absorptive capacity (RAC) (Jansen et al., 2005; Todorova and Durisin, 2007). PAC is defined as acquiring and assimilating knowledge, whereas RAC is defined as the ability to transform and exploit knowledge (Zahra and George, 2002; Ebers and Maurer, 2014; Bouguerra et al., 2021). Although a burgeoning stream of literature exists on the outcomes of AC (e.g., Cohen and Levinthal, 1990; Martinez-Noya et al., 2013; Huber et al., 2020), there is a paucity of research regarding the contingencies that affect the firm's AC dimensions, especially in the context of emerging markets.

This study is guided by an overarching research question: How and when do firms generate better performance from AC in an emerging market context? To address this research question, we draw on the knowledge-based view (KBV), which posits that the firm's sustainable competitive advantage depends, at least in part, on its ability to develop, acquire, assimilate and deploy valuable knowledge that is hard to develop or imitate by competitors (Nason and Wiklund, 2018). Based on this, we first unpack the link between AC and organizational performance by evaluating the individual impact of PAC and RAC on organizational performance and then the complementary effect of these components of AC on organizational performance. The underlying assumption is that PAC and RAC are conceptually distinct and are driven by different mechanisms and contingencies, despite that they complement each other in enhancing performance (Ebers and Maurer, 2014; Kotabe et al., 2014); therefore, their separate and combined effects might be different.

Unpacking the AC construct and investigating different boundary conditions on the AC-performance link is crucial to uncovering how AC contributes to organizational performance (Volberda et al., 2010; Wales et al., 2013). Firms operating in dynamic environments, typical of emerging markets, rely on relationships through external networks to complement their internal knowledge acquisition and integration and promote innovation in a quick and effective manner (Martin de Castro, 2015; Popli et al., 2017). Given this reliance on external knowledge

in emerging economies, we argue theoretically and demonstrate empirically that the branch network (as a core organizational capability) and environmental dynamism (as a main external factor) are important boundary conditions that determine the extent to which firms can benefit from their AC. Because of the rapid change in technological advances and weak innovation and institutional systems in their home country, emerging market firms are more challenged to obtain, decode, and apply incoming external knowledge (Nair et al., 2018). As such, firms seeking to acquire and utilize new external knowledge also need to adapt this knowledge to their specific needs and requirements for the purpose of gaining and sustaining a competitive advantage (Falahat et al., 2018; Temouri et al., 2020). A branch network, defined as the geographical presence of branches/units (Hirtle, 2007), plays an important role in overcoming some of these challenges. A larger network enables firms to create linkages with the external network members and exploit these opportunities to exchange and then integrate external knowledge successfully (Popli et al., 2017). Furthermore, the influence of the external environment, such as environmental dynamism, hostility, and uncertainty on the firm's competitive advantage, has long been recognised in the management and strategy literature (Cohen and Levinthal, 1990; Zajac et al., 2000). For instance, environmental dynamism simultaneously imposes constraints as well as opportunities for firms (Child, 1972), influencing learning processes that are valuable, which in turn are costly to develop and apply successfully (Chittoor et al., 2008; Kim et al., 2015). Dynamism in the firm's environment is a particularly salient characteristic of emerging markets, which frequently undergo institutional, political, and economic reforms and improvements.

We focus on the Turkish banking sector as our research setting. Turkey has been largely omitted in previous studies on emerging counties (Ayden et al., 2020). For various reasons, we argue that the characteristics of the Turkish banking sector provide a particularly fertile context for studying the learning and innovation process. Turkey is the 17th largest economy globally and the biggest in the Middle East (World Bank, 2021) and a favourite target among emerging market investors. With its dynamic and growing economy that links Asia to Europe, Turkey represents a leading emerging economy in pursuit of innovation and learning opportunities (Tatoglu et al., 2020). This environment has compelled Turkish banks to quickly scale up their

knowledge absorption capability. The banking sector has provided the financial foundation for Turkey's remarkable growth and resilience in recent years. Also, the sector has a significant role in promoting innovation, new product offerings, and supporting other industries, such as agriculture, construction and manufacturing (Uzkurt et al., 2013; Wigley and Çağatay, 2019). International financial developments over the last two decades, such as digital transformation, the liberalization process of financial markets, and the emergence of FinTechs, have brought about radical changes in the industry and revolutionized banking in Turkey. Moreover, the Turkish banking sector has become the largest sector for foreign direct investment (FDI), comprising nearly one-third of the cumulative FDI stock of USD 225 billion, thanks to regulatory and structural reforms that were first introduced in early 2000 (Investment Office - Presidency of the Republic of Turkey, 2021). The latter has resulted in an influx of external knowledge that probably needed modification and local adaptation. Within this backdrop, banks are in a continuous quest for learning and innovation to succeed in a competitive and changing environment (Wigley and Çağatay, 2019). Consequently, the dynamism in the Turkish economy, along with the importance of innovation in the Turkish banking sector, offers an appropriate setting to investigate how banks upgrade their innovation capabilities to remain competitive and thrive.

We contribute to the literature on the AC-performance link in two notable ways. The first contribution is the extension of the KBV to the emerging market context. We respond to Pereira and Bamel's (2021) call for applying the KBV lens to explain how innovation capabilities are developed in emerging markets. KBV, as an extension of the resource-based view (RBV), provides a compelling theory to explain how knowledge, as the most strategically significant resource of a firm, is created, developed, and applied (Kogut and Zander, 1992; Darroch, 2005; Bacq and Eddleston, 2018; Pereira and Bamel, 2021). However, we still know little about how the KBV can explain the innovation capabilities development of firms in emerging markets where the rapid change in institutional, political, and competitive landscape influences the successful acquisition and utilization of knowledge. We extend the KBV perspective by showing that innovation and knowledge resource development in emerging markets requires a collective effort and a complementary learning process to yield high returns. By unpacking the

AC construct and investigating different boundary conditions, this study explicates the different paths that AC can contribute to organizational performance, especially when the environment is dynamic. Particularly, in investigating the complementary (mediating) and separate (direct) effects of AC components on performance, we uncover differences in firm outcomes and provide compelling evidence on how firms in emerging markets generate better financial performance.

The second contribution lies in explaining the conditions under which firms in emerging markets can complement their AC components efficiently to achieve greater performance. It is widely acknowledged that AC does not automatically translate to greater performance (Cohen and Levinthal, 1990; Volberda et al., 2010; Kotabe et al., 2014). This is particularly evident in the context of emerging markets characterized by dynamic environmental conditions where the mere acquisition and assimilation of knowledge are not sufficient. To obtain performance advantages, firms are required to adapt the external knowledge to the unique requirements of the local context. The KBV perspective holds the premise that the essence for achieving better performance resides not only in the assimilation and exploitation of new knowledge but also in a combination of other organizational capabilities to overcome barriers of knowledge assimilation and integration (Grant, 1996). We address this by examining how the firm's networking resolves the difficulty of upgrading an effective learning process that recognizes, assimilates, and exploits knowledge effectively in emerging markets. Also, we examine how environmental dynamism affects the AC-performance link. Thus, through integrating the boundary conditions of branch network and environmental dynamism, we provide a more in-depth understanding of the multilevel and cross-level relationships of PAC and RAC in predicting organizational performance.

## **2. Conceptual background and hypotheses development**

The seminal study by Cohen and Levinthal (1990, p. 128) defines AC as the firm's "ability to recognize the value of new information, assimilate it, and apply it to commercial ends". The firm's AC has been conceptualized and measured in various ways (e.g., Zahra and George, 2002; Lane et al., 2006). Following calls for viewing AC as a multifaceted and complex

phenomenon (e.g., Zahra and George, 2002; Volberda et al., 2010; Aliasghar et al., 2020), in this study we adopt a multidimensional operationalization of AC and explicitly distinguish between its different components. Following Zahra and George (2002), we differentiate between potential absorptive capacity (PAC) and realized absorptive capacity (RAC) as two fundamental constituents of AC. PAC represents exploratory learning through acquiring and assimilating external knowledge. This knowledge will be generated from the external environment (e.g., knowledge spillovers from FDI), which constitutes the primary source of knowledge in emerging markets. On the other hand, RAC reflects exploitative learning and pertains to transforming and exploiting knowledge to enhance organizational performance. The underlying argument is that managing PAC and RAC efficiently enables the firm to develop and sustain a competitive advantage.

Despite the persistent calls for adopting a multidimensional conceptualization and measurement of AC, very few empirical studies have examined its underlying components, learning processes, or routines in general (Jansen et al., 2005; Ebers and Maurer, 2014) and in emerging markets in particular (Pereira and Bamel, 2021). Instead, empirical research has focused mainly on secondary proxies and indirect measures of AC (e.g., Lane and Lubatkin, 1998; Volberda et al., 2010; Laursen et al., 2012). Scholars have called for more process-based work of the firm's AC, as it appears crucial to understand the interactions among the processes underlying PAC and RAC and their organizational outcomes (Aliasghar et al., 2019; Khan et al., 2019).

### *2.1. Knowledge-based view*

The KBV, as an extension of the RBV, provides a perspective for analyzing how firms acquire and utilize knowledge to cope with changing market conditions. The KBV argues that firms should develop the capacities to acquire, assimilate, integrate, and apply valuable knowledge for the purpose of achieving a sustainable competitive edge (Grant, 1996). Also, the KBV posits that the development of learning processes rests not only on the combination and integration of new knowledge but also on various strategic mechanisms and capabilities, which are essential for the firm's long-term survival. As such, the development of organizational

innovativeness is related to the combination of assimilation and integration of knowledge-based resources and other distinct capabilities.

The KBV suggests that AC is a multidimensional capability that includes complex processes related to acquiring, processing, and utilizing external knowledge. Previous studies have provided a good deal of support for various activities that go along with the multiple dimensions of absorptive capacity (Jansen et al., 2005; Bouguerra et al., 2020). This complexity emerges from two main factors: Integration of knowledge and context specificity.

It is argued that integrating new external knowledge is critical, especially for firms operating in turbulent and dynamic environments (Yu et al., 2013; Pereira et al., 2021). The difficulty lies in the ability to decode incoming external knowledge and link learning processes. When acquiring new knowledge from diverse sources, firms often confront barriers to applying this knowledge successfully to existing knowledge. Firms must tailor external knowledge to match their needs in order to gain a competitive edge. Consequently, newly acquired external knowledge must complement existing knowledge (Cuervo-Cazurra and Rui, 2017). Based on this argument, firms should develop mechanisms and capabilities to overcome organizational barriers that stifle knowledge retention and integration, especially in emerging markets. We argue that the branch network plays a crucial role in generating and integrating new knowledge successfully.

The specific context of the study also has important implications for understanding the performance consequences of AC. The KBV argues that context matters in the assimilation and utilization of knowledge. Learning processes (e.g., AC) are influenced by environments characterized by technological dynamism, competitive intensity, and environmental complexity (Wright et al., 2005; Luo and Bu, 2016). For instance, firms operating in emerging markets are faced with dynamic and complex environments because they are undergoing institutional, political, economic, and financial changes. The conditions inherent in emerging markets affect the acquisition and application of new knowledge (Bruton et al., 2013). Thus, we posit that firms operating in dynamic environments are shaped by this setting in their development of AC.

In sum, prior research has neglected important contingencies that influence the AC-performance link in the context of emerging markets. We fill this lacuna by examining the moderating effects of branch network and environmental dynamism on the link between AC and organizational performance.

## *2.2. Absorptive capacity and organizational performance*

The link between AC and organizational performance has been the subject of much debate and conflicting findings, which indicates that a positive effect is not guaranteed, nor is it generalizable (Apriliyanti and Alon, 2017). For instance, empirical research has demonstrated that AC may lead to decreasing revenues or has a mixed effect on performance (Martinez-Noya et al., 2013; Kotabe et al., 2014). Variations in the operationalization and measurement of AC can, to some extent, explain the equivocal results of previous studies. However, understanding of whether and under what conditions organizations generate greater performance from AC remains limited. Previous research has pointed to the moderating impact of contingency factors, such as external factors (i.e., environmental dynamism, industry complexity, and country risk), in explaining these variations in organizational outcomes (Lichtenthaler, 2009). In addition, prior research has failed to examine internal factors that may shape the AC-performance link. Indeed, it is argued that failing to account for the components that constitute the firm's AC under external and internal contingencies curtails the richness and multidimensional nature of the construct.

Little emphasis has been placed on the role and impact of AC in emerging markets (Cuervo-Cazurra and Rui, 2017; Khan et al., 2019), which has hindered our understanding of how firms in emerging markets develop their learning and innovation processes and acquire and exploit knowledge successfully. Also, little is known about the underlying circumstances that shape the AC-performance link in such contexts.

To organize our argument, we first posit that when examined separately, PAC and RAC positively affect organizational performance. We then argue that there is complementarity between PAC and RAC in achieving performance. Finally, we posit that the moderating effects



of branch network and environmental dynamism strengthen the relationships between complementary AC components and organizational performance.

### *2.3. Linking potential and realized absorptive capacities to performance*

Scholars have primarily focused on secondary proxies and indirect measures of a firm's AC, such as HR practices, R&D, patents, and alliances (Flatten et al., 2011; Lin et al., 2012). Some studies (Camison and Fores, 2010; Ebers and Maurer, 2014; Patton, 2014) have attempted to capture the construct using a process-based approach suggested by Zahra and George (2002). While there is an abundant use of secondary measures, the components that constitute the firm's AC have been overlooked in prior research especially in the context of emerging markets (Khan et al., 2019; Aliasghar et al., 2020) that have considered the two AC components highlight that PAC and RAC vary in their organizational outcomes. Despite this deductive ar

In the context of emerging markets, it is critical to scrutinize firms' AC and examine how they manage knowledge acquisition, assimilation, transformation, and exploitation, because their knowledge platform is relatively underdeveloped, and they are dependent on external sources in order to develop their innovation capabilities and sustain competitiveness (Khan et al., 2018; Khan et al., 2019). For instance, PAC enables knowledge infusion and contributes to the firm's development of superior innovation. Also, PAC plays a critical role in strategic renewal and responsiveness to market dynamics (Liao et al., 2003). RAC also exhibits the ability of a firm to utilize the integrated knowledge consistently for commercial purposes. Moreover, RAC allows a firm to internally comprehend infused external knowledge and then translate such knowledge into a firm-specific advantage (Khan et al., 2019). Hence, managing and developing PAC and RAC is vital to acquire useful external knowledge and apply this knowledge for improving performance.

To consider how firms generate greater performance from AC in an emerging market context, we first treat the distinct association of PAC and RAC with organizational performance. This step helps us understand which of the two components of AC is the basis for creating a competitive advantage. This discussion leads to the following two hypotheses:

**H1.** PAC is positively associated with organizational performance in an emerging market context.

**H2.** RAC is positively associated with organizational performance in an emerging market context.

#### *2.4. Complementary effect of potential and realized absorptive capacities*

From the KBV, the capacity of a firm to develop innovation and increase performance is influenced by PAC and RAC, through which both processes are interdependent and complementary. Lew and Liu (2016, p. 290) commented that “*well-developed mechanisms of knowledge acquisition and assimilation may contribute to firms’ achievement of superior innovation performance. An efficient process of knowledge transformation and exploitation will allow a firm to sustain such a competitive advantage owing to its flexibility in utilizing resources.*”

A firm not only has to acquire external knowledge, but this knowledge should also be assimilated, transformed, and exploited so that the firm can utilize it for promoting innovativeness and subsequently gain competitive advantage (Leal-Rodriguez et al., 2014; Khan et al., 2019). Firms lacking the capability to transform and exploit knowledge will be unable to create value from AC. Accordingly, the simultaneous interaction of the capabilities underlying PAC and RAC leads to the development of the firm’s AC and provides unique value to the firm (Tanriverdi and Venkatraman, 2005). For instance, a firm with robust exploitation of knowledge tends to generate many innovations from a base of newly acquired and assimilated knowledge. In contrast, a firm may fail to apply assimilated knowledge because of limited exploitation capacity (Zahra and George, 2002). Moreover, given that organizational performance is primarily generated from PAC, firms are likely to put exclusive emphasis on this process (Todorova and Durisin, 2007). However, the positive effect of PAC may be limited if the level of RAC is limited.

Specifically, firms operating in emerging markets need to optimize the full benefits from AC. In this setting, firms deploy both PAC and RAC capabilities to upgrade innovation and

their knowledge base. The core argument here is that creating synergy between the two AC components leads to greater benefits (Lane et al., 2006; Ebers and Maurer, 2014). This requires that firms promote internal knowledge-sharing routines in order to utilize external knowledge for value creation.

We, therefore, argue that the link between PAC and organizational performance in an emerging market context is mediated by RAC, which leads to the following hypothesis:

**H3.** PAC is positively associated with organizational performance through RAC in an emerging market context.

### *2.5. Moderating effects of branch network and environmental dynamism*

Building on the argument that PAC is positively associated with organizational performance through RAC, we posit that the moderating variables of branch network and environmental dynamism will strengthen/weaken this relationship.

Emerging markets essentially suffer from institutional deficiencies and weak innovation systems (Khanna and Palepu, 2010). To promote innovation mechanisms in such institutional settings often requires firms to develop collaboration and networking capabilities beyond the firm's boundaries. These capabilities may substitute for formal governmental support or institutional privileges (Luo, 2003). Networking capability allows firms to overcome institutional deficiencies and exploit opportunities from the external environment. With strong networking, emerging market firms can develop linkages necessary to exchange knowledge and technological expertise and then promote and diversify learning options (Gebauer et al., 2012). They are often compelled to deploy networking capabilities to be more effective in acquiring and integrating knowledge and subsequently improving their organizational performance.

Businesses that actively engage with the external market are not only influenced by the variations in their environments but also by the degree of their geographical presence (e.g., branch network). In this context, firms may find it difficult, especially in emerging markets where the environment is fluid, to integrate key resources generated from outside the firm's

boundaries. In the context of emerging markets, firms need sufficient managerial skills and knowledge of the environment in which they are based to assist them in understanding, interpreting, and applying useful information more swiftly and efficiently than their competitors (Mowery and Oxley, 1996). A branch network, based on the extent to which firms establish linkages through expanding their subsidiaries/branches/units, enhances the speed of acquiring and integrating new knowledge (Roberts, 2015). Such linkages alleviate uncertainty and multiply learning opportunities from customers, suppliers, and government agents (Elango and Pattnaik, 2007; Sepulveda and Gabrielsson, 2013). For instance, a branch network is becoming an enabler for new learning processes, as they are flexible and respond to local needs and develop and exchange knowledge about new customer preferences and overall market demands. Moreover, by developing market intelligence through extending the network (i.e., having many branches/units), firms are likely to acquire different resources and subsequently develop skills necessary to generate and utilize external knowledge successfully (Gnyawali and Park, 2009).

In addition, geographical presence allows firms to develop and deploy core capabilities to tackle emerging environmental challenges and risks. For instance, firms dealing with uncertain situations arising from increased competitive pressures tend to expand their business presence via establishing multiple units/branches. This helps them generate key information about market changes, strategic flexibility, and customer responsiveness, which are core capabilities to promote organizational learning (Simon et al., 2015). As such, firms operating in emerging markets with an extensive branch network are expected continuously to sense the external environment and possess flexible and agile practices, which establish a solid basis to recognize and assimilate valuable knowledge. In this way, firms also develop the correct mechanisms to execute actions and react to potential disruption in implementing newly acquired knowledge (Roberts, 2015). Indeed, increasing the network in the context of emerging markets helps firms to access valuable resources and to develop core capabilities (Popli et al., 2017) necessary to acquire and exploit knowledge successfully and also to achieve superior performance.

In line with the above discussion, we posit that a large branch network positively affects the extent to which firms acquire and exploit knowledge in emerging markets. Consequently, we stress that the effect of PAC on organizational performance through RAC is stronger where the branch network is large. This is stated more formally in the following hypothesis:

**H4.** PAC has a stronger effect on organizational performance via RAC where the branch network is large in an emerging market context.

The firm's learning mechanism and processes are ingrained in an environmental context (Lichtenthaler, 2009). Even though the firm may slightly affect its external environment, dynamic processes are indeed context-dependent (Teece, 2007). Following the KBV, analyzing the environment is essential to explicate the variations of organizational outcomes from a firm's AC. This is because different factors and states in the firm's environment imply different organizational outcomes. For instance, dynamic environments tend to increase causal ambiguity, where firms can either achieve superior performance based on their dynamic processes or face organizational inertia, resulting in a decline in organizational performance. Environmental dynamism is typical in emerging markets, and dynamism provokes competitive opportunities and threats capable of reshaping learning processes (Volberda et al., 2010).

The prevailing view in the literature suggests that dynamic capabilities are more relevant in turbulent markets (Buccieri et al., 2020). For example, Wales et al. (2013) reported that AC has positive effects in highly volatile environmental conditions. In contrast, this impact is weaker and short-lived in a stable environment. Ensley et al. (2006) noted that the effect of AC (proxied by leadership capabilities) on performance varies according to the degree of market dynamism. The authors showed that the AC-performance link is positive in a stable environment while negative in a dynamic environment. A study by Park and Gallagher (2002) found that in a dynamic setting, resource-rich firms are in a better position, compared to poorly resourced firms, to benefit from external resources via alliances. Thus, it may be assumed that the impact of AC will differ substantially according to the level of environmental dynamism. Surprisingly, however, this boundary condition has been relatively neglected in prior research,

particularly within the subset of literature that focuses on a process-based approach to the firm's AC.

The limited attention is remarkable because firms are often involved in acquiring and utilizing knowledge, and this strategic action is subject to various environmental influences (Cassiman and Veugelers, 2006). Accordingly, the degree of change in the external environment may help or hinder firms from acquiring and exploiting external knowledge to sustain competitive advantage. Empirical studies adopting a process-based approach have emphasized the impact of environmental dynamism on the link between PAC and RAC and performance. For instance, Jansen et al. (2005) found that in a low level of environmental dynamism, firms generate greater financial performance from PAC, and to a lesser extent, from RAC. However, in keeping with the distinction of PAC and RAC, we underscore the dynamic and multidimensional nature of the firm's absorptive capacity (Volberda et al., 2010). This study investigates the effect of environmental dynamism on the complementarity of PAC and RAC in improving superior organizational performance in emerging markets. In so doing, we assess the extent to which a low level of environmental dynamism strengthens the indirect association between PAC and organizational performance via RAC. Thus, we suggest that:

**H5.** PAC has a stronger effect on organizational performance via RAC where environmental dynamism is low in an emerging market context.

The conceptual model is presented in Figure 1.

**[Figure 1]**

### **3. Research methods**

#### *3.1. The relevance of the context*

We identified Turkey as our research setting for several reasons. The emerging market of Turkey is characterized by dynamism and uncertainty, and firms in this context are seeking to develop their innovation capabilities and acquire external knowledge. Turkey is one of the largest countries in the Middle East and South-Eastern Europe. It is one of the G20 countries

and is considered one of the major emerging markets. However, Turkey is still a relatively under-researched setting. It shares similar characteristics (e.g., institutional, industrial, and organizational) with other leading emerging markets, including Mexico, Brazil, Chile, and Ukraine (Fainshmidt et al., 2016), enhancing the generalizability of our findings.

The Turkish banking sector demonstrated strong resilience and efficacy during the financial crisis of 2008. The Turkish government initiated and implemented regulatory reforms and structural transformation following the financial turmoil that hit the nation in the early 2000s. Such reforms were necessary to boost foreign investment and enhance investor confidence (European Central Bank, 2019). These reforms came in the form of deregulation and technological developments, providing a much greater opportunity for variety in competitive strategy. The Turkish banking market has received a massive amount of foreign direct investment over the past twenty years. Almost half of the total number of banks (47 banks) are state-owned banks. In fact, foreign banks are increasing their investments in the Turkish financial sector, while domestic banks are seeking to increase their global penetration and integration. Firms in the banking sector have diversified their products and services and expanded into new markets to survive and grow. These firms have noted that resources, such as knowledge and technology, are the most valuable source of sustained competitive advantage in the banking sector (Erdem, 2014).

### *3.2. Sampling and data collection procedures*

We collected the data through mailing questionnaires to our sample firms. In line with the back-translation process suggested by Brislin (1986), the questionnaire was initially developed in English, then back-translated into Turkish. The back-translation practice was vital to depict possible misunderstandings and misconceptions before finalizing the survey. Two bilingual scholars were also involved in checking the back translation of English and Turkish versions and ensuring the translation's quality and validity.

The sample respondents consist of top-level and middle-level managers who have relevant understanding and experience about core organizational processes and actions. The

average bank work experience of these managers was 10.6 years, and they had occupied their current position for an average of 5.7 years.

We framed our sample from the Banks Association of Turkey (BAT). This government database provides information about all banks operating in the country. A total of 47 banks and 10,397 bank branches were located. The firms in the banking sector are composed of government-foreign and private-owned banks. A sampling frame of 1,000 branches of 25 banks was drawn up following a random sampling selection procedure.

Following two rounds of data collection with two reminders, we obtained 215 completed questionnaires, of which 205 questionnaires of 24 banks were usable, resulting in a response rate of 20.5%.

In evaluating non-response bias, we randomly selected a group of 50 non-participating bank branches and 215 respondent bank branches. The results showed no significant variation ( $p > .1$ ) across the following demographic variables: industry, the number of employees, and turnover. This indicates that non-response bias is not a severe problem in our research.

We also conducted post-hoc tests to analyze if there are any nuances between government-owned banks and foreign banks for the measured variables in this study. The results showed that there are no significant nuances in the responses among the two types of ownership (government and foreign-owned banks) for these variables: Potential absorptive capacity (t-value=.41,  $p=.73$ ), realized absorptive capacity (t-value=.94,  $p=.38$ ), branch network (t-value=.56,  $p=.28$ ), environmental dynamism (t-value=1.55,  $p=.80$ ) and organizational performance (t-value=1.08,  $p=1.53$ ).

### *3.3. Measurement of variables*

We measured most of our variables and items using a 7-point Likert scale (1= “strongly disagree” to 7= “strongly agree”).

#### *3.3.1. Dependent variable*

*Organizational performance* was assessed using eight items (Jaworski and Kohli 1993; Zou and Cavusgil, 2002; Jansen et al., 2005). The variable consists of several aspects of the financial



performance (ROA, ROE, and cost efficiency) of firm branches compared to their direct competitors.

### 3.3.2. *Independent variable*

To measure *potential absorptive capacity*, nine items were used to assess the ability of a firm to acquire and assimilate new knowledge (Jansen et al., 2005). We later removed two items due to low factor loadings. Four items to measure acquisition and three items to assess assimilation of knowledge. The acquisition and assimilation variables were combined to a single measure of PAC.

### 3.3.3. *Mediating variable*

We used twelve items to measure *realized absorptive capacity*. Six items assess how firms transform knowledge, and six items measure how to exploit knowledge (Jansen et al., 2005). The transformation and exploitation variables were combined to a single proxy of RAC.

### 3.3.4. *Moderation variables*

*Branch network* is operationalized by measuring the sum of branches dispersed in our research site. We used the total sample mean of branch network to split the sample into two subsamples of low and high network. A large branch network represents banks whose branches are above the mean, while a small branch network represents banks whose branches are below the mean. This approach enables us to have two sub-samples of similar size (Hirtle, 2007).

*Environmental dynamism* was measured using five items from Volberda and Van Bruggen (1997). The construct evaluates the level of dynamism and change in the domestic market.

### 3.3.5. *Control variables*

In line with previous research (e.g., Jansen et al., 2005; Bolívar-Ramos et al., 2013; Wales et al., 2013; Bouguerra et al., 2020), we used *ownership structure, firm size, firm age, manager's educational level, and work experience and managerial level* as our control variables. We measure

*ownership structure* using two ordinal categories (local/foreign). *Firm size* was measured by the number of employees in each branch. Firm size is widely used in previous research to depict its effect on the outcome variable. *Firm age* was measured by the number of years the firm had been in operation. We measured the manager's *work experience* within the same firm. The *educational level* represents the qualification levels of managers.

## **4. Findings**

### *4.1. Confirmatory factor analysis*

Our CFA results are as follows: [ $\chi^2=1237.6$ ;  $DF=512$ ;  $\chi^2/df=2.42$ ,  $p<.01$ ; incremental fit index (IFI)=.85; comparative fit index (CFI)=.85; root-mean-square error of approximation (RMSEA)=.06; Tucker-Lewis index (TFI)=.82]. The results show there is a good fit with the data. Tables 1 shows the items used in this study together with the CFA values.

#### **[Table 1]**

### *4.2. Common method bias and endogeneity*

In this study, we employed different design and statistical techniques to deal with the potential risk of common method bias (CMB). In the first step, we initiated design-related techniques by pre-qualifying our potential participants, characterized by the possession of key knowledge of organizational processes and their outcomes. Next, we communicated to all respondents that their answers were strictly confidential and anonymous. Participants returned the survey questionnaires in a sealed envelope. This procedure helped us alleviate any social desirability bias (Podsakoff et al., 2012). Also, we split our dependent and independent constructs from each other and randomized the items within each construct. In addition, for each bank, at least seven managers completed the questionnaire to increase the validity and consistency of responses. Thus, we obtained data from various respondents to gauge any possible differences in performance from AC. This mitigates the likelihood of CMB effects.

In the second step, we used two statistical tests to check if there is a CMB effect. First, Harman's single-factor test was undertaken to check if a single factor explains most of the variance (Podsakoff et al., 2003). The results show that a single factor did not account for the majority of the variance in the items. Second, we adopted the marker variable technique, as

recommended by Podsakoff et al. (2012). In doing so, we took the smallest correlation between the marker variable and the substantive variables as an estimate of the CMB effects, followed by subtracting the lowest positive correlation between self-reported variables from each correlation value. The results show that differences between the unadjusted and CMB-adjusted correlations were relatively small (i.e., between .01 and .005). Based on these findings, CMB is not a major issue for our study.

In line with previous research on AC (Vasudeva and Anand, 2011; Schweisfurth and Raasch, 2018; Ho et al., 2020; Sultana and Turkina, 2020), to check for potential endogeneity, we conducted a two-stage least squares (2SLS) estimation with an instrument variable. We used organizational systems as an instrumental variable for two reasons. Defined as the ability of a firm to transform activities and execute actions through systems, formalization, and routines (Crossan et al., 1999; Van Den Bosch et al., 1999), organizational systems reflect the core argument of PAC as it enables the integration and application of new knowledge (Bouguerra et al., 2020). Second, the organizational systems variable is highly correlated with PAC but not with performance, the dependent variable, which suggests that it is a valid instrument for our research. According to 2SLS, we regressed PAC on controls and the instrumental variable (i.e., organizational systems), then used the predicted value of this regression in our hypothesized model (Zaefarian et al., 2017). The results for the first stage suggest that the instrumental variable has a significant and positive effect on PAC ( $\beta=.58$ ,  $SE=.08$ ,  $t=7.25$ ). The results for the second stage show that after controlling for endogeneity, PAC still has a positive and significant effect on performance ( $\beta=.69$ ,  $SE=.11$ ,  $t=6.27$ ), indicating that endogeneity is not a problem for our research.

### *4.3. Hypotheses testing*

Table 2 shows the descriptive statistics and correlations.

#### **[Table 2]**

Based on the hierarchical nature of our data - our sample is drawn from various bank branches (7–10) with one respondent for each branch - we run a multilevel modelling technique- MLwiN software. We utilized an online tool of Monte Carlo Markov Chain

(MCMC) to test the mediating effects of RAC on the relationship between PAC and organizational performance (Bauer et al., 2006). The mediation effect is significant when the confidence intervals do not entail the value of zero (Selig and Preacher, 2008). To test the moderated mediation effect, we followed the procedure of Edwards and Lambert (2007) by splitting the sample data of the branch network and environmental dynamism moderators to below (low) and above (high) the mean. We computed bias-corrected bootstrapped standard errors and confidence intervals for the indirect effect for both levels of branch network and environmental dynamism. If the bootstrapped confidence interval for the index excludes zero, it may be concluded that there is evidence of moderated mediation (Hayes, 2015).

To verify and justify the use of multilevel modelling as the suitable statistical method, we analyzed a model of one level (branch level) to a model of two levels (branches nested in banks). The result was found to be significant ( $495.31-474.72=20.59$ ;  $p<.01$ ). Following this step, variance at level 2 was compared to the overall variance by dividing .12 (level 2 variance) by .64 (the total variance), resulting in the value of .18. This value is higher than .1, which validates using a multilevel modelling technique (Klein et al., 2000).

Tables 3a reports the findings of the effects of PAC and RAC on performance. Table 3b displays the mediating effect of RAC on the PAC-performance link. Table 3c displays the interaction effects of environmental dynamism and branch network at high and low levels. There are three models for assessing the effects of PAC and RAC on performance. Model 1 involves control variables only. Model 2 reports findings of the effect of PAC on performance, while Model 3 reports the findings of RAC on performance. There are two models to test the mediation effect of RAC on the relationship between PAC and performance (Models 4 and 5). The moderated mediation effects of environmental dynamism and branch network are reported in Table 3c.

### **[Tables 3a, 3b, 3c]**

As Model 2 in Table 3a shows, PAC has a significant and positive impact on performance ( $\beta=.54$ ,  $p<.01$ ), providing strong support for H1. Also, Model 3 demonstrates that RAC positively and significantly affects performance ( $\beta=.14$ ,  $p<.05$ ), providing strong support H2.

To test the mediation effect of RAC on the PAC-performance link (H3), we followed Bauer et al.'s (2006) recommendations. Model 4 Table 3b shows that PAC has a strong and positive impact on RAC ( $\beta=.74$ ,  $p<.01$ ). Also, Model 5 indicates that the effect of PAC on organizational performance is positive and significant through RAC ( $\beta=.39$ ,  $p<.01$ ).

Further, following Selig and Preacher's (2008) recommendation, we conducted a multiple mediation model with 5000 bootstrapping samples and 95% bias-corrected confidence intervals using the online tool MCMC. The results show that the mediating effect of RAC on the PAC-performance relationship is significant (i.e., indirect effect=.09,  $p<.01$ ). Also, the results of the confidence interval at 95 percent (CI: .08-.22) of the mediation do not contain zero. Hence, the results provide support for H3.

For the moderated mediation hypotheses (H4 and H5), we followed a procedure by MacKinnon and Fairchild (2009). In so doing, we divided the sample into two subsamples: large branch network (above the mean number of bank branches) and small branch network (below the mean number of bank branches). Table 3c shows that the mediating effect is significant ( $\beta= .15$ ,  $p>.1$ ) when branch network is large (95% CI: .06 - .15); and insignificant ( $\beta=.28$ ,  $p>.5$ ) when branch network is small (95% CI: -.2 - .4). The bootstrapped confidence interval for the index excludes zero at a high level of branch network, indicating that the moderated mediation is significant. Therefore, the results provide support for H4.

Table3c shows that the moderated mediating effect is significant ( $\beta=.14$ ,  $p<.5$ ) when environmental dynamism is low (95 % CI: .26 - .6); and insignificant ( $\beta=.12$ ,  $p>.5$ ) when environmental dynamism is high (95% CI: -.08 - .22). The bootstrapped confidence interval for the index excludes zero at a low level of environmental dynamism, indicating that the moderated mediation is significant. Hence, the results provide support for H5.

## **5. Discussion and contributions**

Drawing on the KBV, this study has examined the nature of the relationship between AC and performance to understand how and when firms in an emerging market, namely Turkey, generate greater performance from AC. In doing so, we build on and develop the insights of prior studies on the relationship between AC and performance. Our findings highlight the

importance of complementarity between PAC and RAC in achieving greater financial performance. Our findings also show that the performance outcomes of complementarity between the AC components are affected by multiple boundary conditions. Specifically, we find that the mediating effect of RAC on the PAC- performance link is moderated by levels of branch network and environmental dynamism. We find that the complementary effect of PAC and RAC is stronger when firms possess a large branch network and the environmental setting is stable.

Despite their significant share of global output, emerging economies, including Turkey, have received limited scholarly attention from the point of view of innovation and learning practices (Hertenstein and Williamson, 2018; Khan et al., 2019). Since 2000, Turkey has experienced significant economic and regulatory reforms, resulting in becoming one of the main recipients of FDI. In particular, the Turkish banking industry has become the largest sector for FDI (Investment Office - Presidency of the Republic of Turkey, 2021), with the banking industry being at the forefront of pursuing innovation and learning from both internal and external sources (Wigley and Çağatay, 2019). However, there are often sharp differences between the sources of external knowledge, mainly from more developed countries, and the context of Turkey in which the new knowledge needs to be implemented. These differences mean that the mere acquisition and integration of knowledge are not sufficient. Instead, the new knowledge must be adapted to the local requirements in order to contribute to organizational performance. This situation renders a unique context to study how banks in Turkey develop knowledge and innovation activities and their impact on sustained growth and competitiveness.

### *5.1. Theoretical contributions*

This study makes two main theoretical contributions. First, we extend the KBV to the emerging market context. In responding to Pereira and Bamel's (2021) call for applying the KBV lens to explain how innovation capabilities are developed in emerging markets, we theorize and empirically test how the AC components - treating PAC and RAC separately (direct effects) and jointly (mediating effect), lead to better organizational performance. Although there have

been conceptual discussions of PAC and RAC in the literature (e.g., see Zahra and George, 2002; Lane et al., 2006; Volberda et al., 2010), little empirical research on the roles of the AC components, particularly in the context of emerging economies (Khan et al., 2019; Aliasghar et al., 2020). The basic assumption is that PAC and RAC are conceptually different and are driven by different mechanisms and contingencies, despite that they complement each other in improving business performance. Hence, their distinct and joint effects may be different. A central concern in the strategy and international business fields has been to comprehend how firms based in emerging markets learn from each other to develop their innovation capacity and improve performance (Kotabe et al., 2011; Kumaraswamy et al., 2012; Khan et al., 2019; Pereira and Bamel, 2021). To address this, we unpack the two components of AC and empirically show how the components contribute to higher organizational performance. We extend former studies (see Leal-Rodriguez et al., 2014; Khan et al., 2019) by showing that complementarity between PAC and RAC results in enhanced performance. We found that, despite their well-documented differences in terms of the role, drivers, and outcomes (Jansen et al., 2005; Ebers and Maurer, 2014; Leal-Rodriguez et al., 2014; Khan et al., 2019) PAC and RAC are interrelated processes that collectively facilitate the process of acquiring, assimilating, transforming, and exploiting external knowledge (Zahra and George, 2002). We conclude that the ability to acquire and assimilate knowledge (PAC) can result in better financial performance when it is combined with the ability to transform and exploit knowledge (RAC) in emerging markets. Thus, the complementary (mediating) effect is greater than the distinct individual (direct) effects of PAC and RAC on performance, implying the whole of AC is more beneficial than its parts. This evidence shows that in emerging markets, the increase in performance from the firm's AC rests primarily on effective knowledge acquisition and assimilation (PAC) and the firm's ability to apply this knowledge via effective transformation and exploitation of knowledge (RAC). While PAC provides a basis to create competitive advantage, complementary PAC and RAC yield effective outcomes and lead to a sustained competitive advantage in emerging markets. Hence, we extend the KBV perspective by demonstrating that developing innovation and knowledge resources in the context of emerging markets

necessitates collective and complementary learning efforts and processes to yield effective results.

Second, we apply KBV to address how firms in emerging markets complement their knowledge acquisition and exploitation effectively (Grant, 1996; Martin de Castro, 2015). Firms in emerging markets are more challenged to obtain, decode, and apply incoming external knowledge due to their weak integration mechanisms (Cuervo-Cazurra and Rui, 2017). These firms operate in countries with weak innovation systems and undeveloped supporting institutions, which hamper their knowledge development and integration (Zhao, 2006; Khanna and Palepu, 2010). To overcome this disadvantage, firms develop external relationships and networks in order to complement their knowledge in an effective way.

A network provides an important contingency in understanding the implications of AC within the context of emerging markets. We found that RAC provides a strong complementarity between PAC and RAC in achieving greater performance with a large branch network, with the effect diminishing with a small branch network. Consistent with the KBV, we advance research by explicating that, beyond the influence of external factors, internal factors at the organizational level matter in the process associated with acquiring and exploiting external knowledge. The benefit and value of a firm's AC develop with the degree of connectedness (i.e., network), enabling firms to increase their financial performance from AC (Gnyawali and Park, 2009; Roberts, 2015). The basic assumption is that a large network helps firms in emerging markets to recognize, generate, and seize new opportunities more quickly than their counterparts. This capability also enables them to sense and respond rapidly to environmental and institutional deficiencies of emerging markets (e.g., a weak institutional environment) so they can acquire and integrate new knowledge efficiently (Popli et al., 2017). For example, a bank with more branches in an emerging market is more likely to establish robust networks and relationships and develop agile and strategic practices vital for innovation processes. Also, an extensive network exposes firms to different technological and resource options in order to manage the AC process successfully.

The complementary effect of PAC and RAC on financial performance is also affected by dynamism in the external environment. We find that this complementarity is stronger at a low



level of environmental dynamism. In a stable environmental setting, firms in emerging markets can better manage the ability to acquire, assimilate, transform, and exploit knowledge to achieve greater performance. In contrast, in a highly dynamic and volatile environment, the materialization of AC might be more difficult, which negatively affects financial performance. It is also noteworthy that in a highly volatile environment, firms face a dilemma. On the one hand, a rapidly changing environment forces firms to adapt and upgrade their core competencies and develop more fine-tuned dynamic capabilities (Li and Liu, 2014). On the other hand, in a highly volatile and uncertain environment developing and maintaining dynamic capabilities is more costly (Schreyögg and Kliesch-Eberl, 2007). As the environment becomes more turbulent, firms and particularly banks may be more susceptible and find it difficult to manage and develop their PAC and RAC or may do so at a much higher cost, which degrades performance outcomes. This means that banks operating in unstable and dynamic environments are less oriented toward innovative activities and are less motivated to engage with the external environment in order to acquire and exploit new knowledge.

### *5.2. Managerial implications*

Our findings indicate that managers should be aware that the firm's dynamic processes of learning, such as the acquisition and assimilation of knowledge as well as transformation and exploitation of knowledge, have complementary positive effects on financial performance. Our findings indicate that managers should strive to pursue developing PAC in tandem with the development of RAC, as these two components have a synergistic impact on performance. We found that firms operating in an emerging market need to improve their ability to acquire and exploit knowledge. However, an excessive focus on one process (e.g., acquisition/assimilation of knowledge) is likely to affect the development of the other learning process (e.g., transformation/exploitation of knowledge), leading to different performance effects. Our data shows that a balanced development of the two AC components positively contributes to superior performance. Drawing on these findings, firms need to balance these dynamic processes of organizational learning, as their complementarity provides opportunities for gaining and sustaining competitive advantage.

The findings carry several direct implications for the focal firms of the study. The banks seeking to maximise their financial returns from AC should grow their presence by creating new branches in various locations. This step will help banks to recognize and seize new opportunities and also assimilate valuable knowledge from the external environment. The focal banks will benefit from better customer relationships and engagement, which will enable them to develop and exchange key information about market dynamics and how they may change over time. Indeed, a wide distribution of branches will enhance learning processes to attain better organizational performance.

Also, managers should be aware that the effective development and complementarity of innovation and learning processes are enhanced when firms operate in stable environmental settings. While banks in emerging markets might have little control over their external environment, they need to develop resources and competencies to engage better with potential changes in the external environment in order to acquire and exploit new knowledge successfully and subsequently maximize financial returns.

### *5.3. Limitations and future research directions*

The study has some limitations, which offer opportunities for further research. The first limitation is related to the distinct effect of processes underlying potential and realized absorptive capacity on organizational performance. The emerging research question is: How and when do the underlying processes of PAC and RAC co-exist and co-evolve to enhance superior organizational performance? To answer this question, we suggest scholars employ qualitative methods to better facilitate the exploration of the extent to which, for instance, transformation and exploitation complement acquisition and assimilation. This research avenue would help further explain the overlap of the two AC components in improving organizational performance and sustaining competitive advantage.

Future studies should examine the antecedents of the complementary components that constitute a firm's AC. Such studies are necessary to explore the complementarity of different components in developing the AC process (e.g., examining the complementarity between potential alliance formation and alliance realization in developing the firm's AC), and would

further enhance the multidimensionality of the AC construct. To realize the concept's full potential, examining various organizational and individual learning processes of absorptive capacity is vital to better understand firms' attitudes and behavior towards external knowledge.

One of the novelties of this study is that, unlike the prevailing focus of extant studies on the manufacturing sector, we investigated the nature and performance consequences of AC in the context of banks as a service industry. However, we do not shed light on service-related factors that can shape a firm's AC-performance link, for example, the potential effect of loan size, liquidity, risk, internet of things (IoT), and service quality (Uwitonze and Heshmati, 2017; Hasanov et al., 2018). Hence, it would be beneficial to investigate whether these factors affect the assimilation and utilization of knowledge. This would provide a more nuanced picture of why some firms benefit more than others from the AC process within the service sector.

Another limitation of this study relates to its distinctive cultural and organizational setting. Turkey is defined by a high level of in-group collectivism (Kabasakal and Bodur, 2007). Within this setting, people possess high social network and connectedness capacities, which allows them to acquire and assimilate knowledge effectively. Therefore, caution must be used in attempting to generalize the findings of this study. Firms that belong to a large network might be influenced and governed by the prevailing cultural and social setting rather than internal mechanisms and capabilities. Also, we investigate banks in Turkey, where the government has been engaged in regulating the sector, so it is difficult to draw general conclusions about the genuine level of environmental dynamism in the country. Thus, exploring the varying contexts (cultural and business) of several emerging markets is warranted to provide a clearer picture of how firms absorb and use knowledge in different environmental conditions and contexts (e.g., industries/markets).

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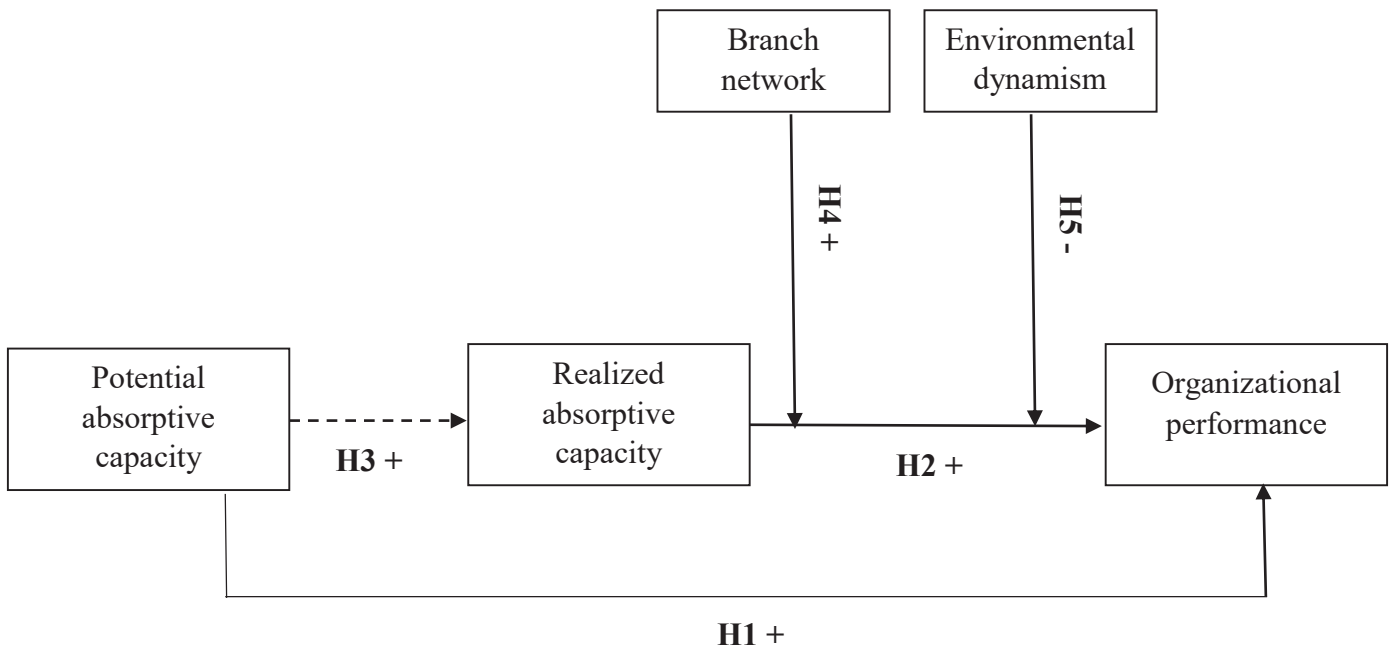
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**Figure 1. Conceptual model**



**Table 1. Confirmatory factor analysis results**

Constructs/items	Standardized loadings <sup>a</sup>	CR <sup>b</sup>
<b>Potential absorptive capacity</b>		<b>.84</b>
Our bank has frequent interactions with corporate headquarters.	.66	
Our bank collects industry information through informal means (e.g., lunch with industry friends, talks with trade partners).	.68	
Our bank periodically organises special meetings with customers or third parties.	.70	
Our bank regularly approaches third parties such as accountants, consultants, or tax consultants.	.51	
Our bank is slow to recognize shifts in our market (e.g., competition).	.73	
Our bank quickly understands new opportunities to serve our clients.	.77	
Our bank quickly analyses and interprets changing market demands.	.56	
<b>Realized absorptive capacity</b>		<b>.88</b>
Our bank regularly considers the consequences of changing market demands in terms of new products and services.	.76	
Our employee's record and store newly acquired knowledge for future reference.	.73	
Our employees clearly understand the opportunities from new external knowledge.	.76	
Our bank quickly recognizes the usefulness of new external knowledge to improve on existing knowledge.	.67	
Our bank periodically meets to discuss the consequences of market trends and new product development.	.70	
Our bank clearly knows how activities should be performed.	.76	
Our bank is constantly looking for ways to better exploit new knowledge.	.85	
Our bank has difficulty introducing new products and services.	.74	
<b>Environmental dynamism</b>		<b>.79</b>
Environmental changes in our local market are intense.	.72	
Our clients regularly ask for new products and services.	.80	
Changes take place continuously in our local market.	.73	
<b>Organizational performance</b>		<b>.91</b>
Our bank has entered new markets more quickly than our competitors.	.67	
Our bank has brought new products/services to the market faster than our competitors.	.75	
Our profit margin has grown considerably compared to our competitors.	.83	
Our return on equity has grown considerably compared to our competitors.	.84	
Our return on assets has grown considerably compared to our competitors.	.83	
The total value of our assets has improved significantly compared to our competitors.	.83	
Our operational efficiency has grown considerably compared to our competitors.	.78	
Our overall cost has been reduced considerably compared to our competitors.	.53	

**Notes:** <sup>a</sup>All loadings are significant at  $p < .01$

<sup>b</sup>CR=Composite reliability

**Table 2. Means, standard deviations, and correlations among variables**

Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11
1. Ownership structure	0.85	.30	1										
2. Firm size	4.65	.71	-.23**	1									
3. Firm age	4.77	1.03	-.22**	.37**	1								
4. Work experience	3.68	1.13	-.08	.15*	.30**	1							
5. Educational level	2.15	.56	.13*	-.06	-.09	-.10	1						
6. Managerial level	4.07	.73	-.02	.06	.02	-.33**	-.13*	1					
7. Potential absorptive capacity	5.56	.81	.04	.18**	.08	.12*	.13*	-.15*	1				
8. Realized absorptive capacity	5.99	.94	.04	.25**	.17**	.04	.01	-.10	.64**	1			
9. Branch network	6.80	.40	-.07	-.05	.28	-.11	.12	.04	.08	.07	1		
10. Environmental dynamism	5.05	1.31	-.02	-.05	-.01	-.11	.12*	.10	.11	.07	.09	1	
11. Organizational performance	5.51	1.13	-.108	.29**	.22**	.09	-.04	-.02	.42**	.40**	.23**	.19**	1

Notes: N=205 managers of banks.

\*p<.05; \*\*p<.01.

**Table 3a. Results of direct effects**

	Model 1			Model 2			Model 3		
	$\beta$	SE	t-value	$\beta$	SE	t-value	$\beta$	SE	t-value
<i>Intercept</i>	3.38**	.77	4.38	4.15**	.72	5.76	4.04**	.73	5.53
<i>Control variables</i>									
Ownership structure	-.02	.06	-.33	-.05	.06	-.83	-.06	.06	-1.00
Firm size	.06	.11	.54	.06	.10	.60	.07	.10	.70
Firm age	.14	.09	1.55	.13	.07	1.85	.09	.07	1.28
Work experience	.01	.07	.14	-.02	.06	-.33	.01	.06	.11
Educational level	-.02	.13	-.15	-.03	.11	-.27	-.08	.11	-.72
Managerial level	-.06	.12	-.50	.02	.11	.18	.02	.11	.18
<i>Direct effects</i>									
Potential absorptive capacity (H1)				.54**	.08	6.75			
Realized absorptive capacity (H2)							.14*	.06	2.33
<i>Change in 2 log-likelihood</i>									
Level 1 intercept variance (SE)	.24	.03		.13	.02		.12	.02	
Level 2 intercept variance (SE)	.40	.02		.38	.01		.35	.01	

Notes: N=205 managers of banks.  
\*p<.05; \*\*p<.01.



**Table 3b. Results of mediation effect**

Variables	Model 4			Model 5		
	$\beta$	SE	t-value	$\beta$	SE	t-value
<i>Intercept</i>	5.45**	.52	10.48	4.26**	.71	6.00
<i>Control variables</i>						
Ownership structure	.06	.04	1.50	-.06	.06	-1.00
Firm size	.15	.08	1.87	.20	.11	1.81
Firm age	.11	.06	1.83	.11	.07	1.57
Work experience	-.09	.05	-1.80	.00	.06	.00
Educational level	-.14	.09	-1.55	-.08	.12	-.06
Managerial level	-.09	.08	-1.12	.04	.11	.36
<i>Mediation</i>						
Potential absorptive capacity → Realized absorptive capacity	.74**	.06	12.33			
Potential absorptive via realized absorptive capacity (H3)				.39**	.05	7.80
<i>Change in 2 log-likelihood</i>						
Level 1 intercept variance (SE)	.03	.02		.07	.11	
Level 2 intercept variance (SE)	.31	.03		.88	.08	

Notes: N=205 managers of banks.

\*p<.05; \*\*p<.01.

**Table 3c. Results of moderated-mediation effects**

Variables	Branch network (H4)						Environmental dynamism (H5)					
	Low			High			Low			High		
	$\beta$	SE	t-value	$\beta$	SE	t-value	$\beta$	SE	t-value	$\beta$	SE	t-value
<i>Intercept</i>	4.53**	.68	6.66	4.82**	.65	7.41	4.94**	.71	6.95	4.90**	.74	6.62
<i>Control variables</i>												
Ownership structure	.04	.04	1.00	.03	.04	.75	.07	.06	1.16	-.06	.06	-.06
Firm size	.12	.08	1.50	.11	.08	1.37	.16	.11	1.45	.20	.11	.20
Firm age	.09	.06	1.50	-.07	.06	-1.16	-.10	.06	-1.66	.11	.07	.11
Work experience	.01	.05	.20	.00	.06	.00	.01	.06	.16	.00	.06	.00
Educational level	-.08	.11	-.72	-.08	.10	-.80	-.07	.10	-.70	-.08	.12	-.66
Managerial level	.06	.10	.60	.08	.11	.72	.08	.12	.66	.07	.12	.58
Indirect effect of realized absorptive capacity	.28*	.14	2.00	.15**	.03	5.00	.14**	.75	5.53	.12	.07	1.71
<i>Confidence interval 95%</i>	-.20 – .40			.06 – .15			.26 – .60			-.08 – .22		

Notes: N=205 managers of banks.

\*p<.05; \*\*p<.01.