

## The Impact of Entrepreneurial Leadership on Innovation Speed and Quality: The Mediating Role of Strategic Flexibility



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**ABSTRACT:** In a highly dynamic and competitive environment, organizations must continuously and rapidly improve their innovation performance to remain competitive and sustainable in the market. Drawing on principles of the upper echelons theory and dynamic capability view of organization, this study aims to examine the mediating role of strategic flexibility in the relationship between entrepreneurial leadership and innovation speed and quality. Questionnaire was designed to data collection from a quota sample of (283) leaders and managers at branches of the most two huge Egyptian banks represent public and private sectors (NBE and CIB). Data analysis was conducted through a two-stage structural equation modeling technique by AMOS. At the first stage, the measurement model was examined for construct validity and reliability, whereas at the second stage, the structural model was run for testing the research hypotheses. The empirical results show that entrepreneurial leadership and strategic flexibility positively and significantly affect both innovation speed and quality. Furthermore, strategic flexibility partially mediates positively the relationships between entrepreneurial leadership and innovation speed and quality. This research proposes guidelines for managers to help enhance organizational innovation through dynamic and strategic flexibility in emerging economies such as Egypt.

**KEYWORDS:** Entrepreneurial leadership; Innovation; Innovation speed; Innovation quality; Strategic flexibility

### 1. INTRODUCTION

Recently, innovation and innovation-oriented initiatives which are knowledge-based are important factors for organizational success and providing a long-term competitive advantage in a highly turbulent and dynamic environment (Ince et al., 2023). However, in a knowledge-based economy, the role of service organizations depends on innovation speed and quality, and researchers have only recently begun to investigate their antecedents and outcomes. Therefore, it is important to focus on the two most attributes of innovation are quality and speed during strategy set and implementation (Iqbal et al., 2019; Iqbal, 2021).

Recent studies suggest that through their leadership style, managers can either encourage or inhibit employee innovative behaviors (Miao et al., 2018; Zheng et al., 2019). It is therefore important to understand the influences of different leadership styles on innovation activities (Liao et al., 2018). The majority of prior research has focused on examining how traditional leadership styles such as transactional, transformational and charismatic leadership relate to innovation (e.g. Al-Mansoori and Koç, 2019; Naguib and Abou Naem, 2018). Despite the valuable and meaningful findings of previous studies, there is a lack of studies on the associations between entrepreneurial leadership style and successful outcomes of firms, particularly in terms of innovation aspect (Yu et al., 2020).

In this sense, corporate entrepreneurship becomes an important role of inspiration for the happening of innovation (Tseng and Tseng, 2019). Entrepreneurial leadership is a concept arising at the intersection between entrepreneurship and leadership (Cai et al., 2019). It is a relatively emergent paradigm that has been applied to overcome the ever-changing and dynamic nature of current organizations (Bagheri and Harrison, 2020). This type of leadership has received increased attention of both scholars and practitioners due to its importance in improving competitiveness, success and growth of all types of businesses, a public or private organization (Bagheri and Akbari, 2018; Miao et al., 2018).

Despite the growing interest, a definition of entrepreneurial leadership and theory remain underdeveloped, there is no consensus among scholars on the definition and the dimensionality of the construct (Bagheri & Harrison, 2020; Harrison et al., 2018). Thus, further development of entrepreneurial leadership theory requires a precise understanding of the factors that constitute the construct (Leitch and Volery, 2017). There are a small number of studies that empirically examine the

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dimensionality of entrepreneurial leadership based on theoretical foundations and developed a measurement model for it (Fontana and Musa, 2017; Huang et al., 2014; Kim et al., 2017).

A review of the prior studies indicates that researchers mostly use the measures developed by Gupta et al. (2004) to examine the association between this type of leadership and employees' individual and group-level behavior as well as organizational performance (Kim et al., 2017). However, recent research uses Renko et al.'s ENTRELEAD (2015) uni-dimensional scale to examine the impact of entrepreneurial leadership practices on employees' innovative behavior (Bagheri and Harrison, 2020).

Although understanding entrepreneurial leadership is relevant given the desirable individual employee's innovative behavior (e.g. Akbari et al., 2021; Miao et al. 2019), the entrepreneurial leadership- organizational innovation link constitutes a complex phenomenon that remains unsolved and has limited interest in literature (Fontana and Musa, 2017; Yu et al., 2020), thus requiring additional work to be understood. Furthermore, the essential role of entrepreneurial leadership in improving a firm's innovation speed and quality is still empirically unexplored, especially in developing economies (Egypt).

On the other side, firms, especially Egyptian banks, operating in dynamic business environments where political instability, high level of market complexity, financial ambiguity, and risk dominate the whole market, must develop dynamic capabilities to gain competitive advantage (Herhausen et al., 2021). Among these capabilities, strategic flexibility enables firms to dynamically manage their resources for adapting to high-velocity environments and reducing risks, and it also helps firms exploit the full potential of their key resource stocks. Strategic flexibility allows firms to respond quickly to unstable environments and act promptly when it is time to halt or reverse existing resource commitments (Kamasak et al., 2017). While, little and scarce attention has been paid to the underlying organizational mechanism of entrepreneurial leadership-innovation relationship, and there is limited empirical evidence of mediating role of strategic flexibility in the relationships between entrepreneurial leadership and organizational outcomes (Hensellek et al., 2023; Yu et al., 2020).

To narrow these research gaps, this study first develops a theoretical framework depicting the mediating role of strategic flexibility in the relationships between entrepreneurial leadership and both innovation speed and quality, and then empirically tests the hypotheses using survey data collected from public and private commercial banks in Egypt. In this sense, we claim that when the external environment is in continuous turbulence, Egyptian entrepreneurial leaders in banks need to develop greater flexibility which help in guiding the business through an unpredictably changing environment and helps the banks to reallocate resources and break down existing operating routines, may leading to faster (speed) and better (quality) innovation activities.

## **2. THEORETICAL BACKGROUND**

### **2.1 Entrepreneurial leadership**

The definition of corporate entrepreneurship has evolved over the past couple of decades. Some researchers define corporate entrepreneurship as a broad concept, while others define it as a narrower concept of innovation.

Kuratko (2009) debates that most researchers view corporate entrepreneurship as a term that "refers to entrepreneurial activities which receive organizational sanction and resource commitments for the purpose of innovation results". It is provided a key definition of corporate entrepreneurship, characterizing as formal or informal activities aimed at creating new businesses in established companies through product and process innovations and market developments (Vanacker et al., 2017).

According to Coglisier and Brigham (2004), the integration between leadership and entrepreneurship result in entrepreneurial leadership style, that received considerable attention in the management literature (e.g. Leitch and Volery 2017; Renko et al., 2015). Thus, entrepreneurial leadership combines together the notions of entrepreneurship and leadership, by highlighting opportunity exploration and exploitation as organizational goals, and mobilizing followers to adapt in the disrupted environment (Cai et al., 2019).

Emphasizing the challenge of mobilizing the resources and gaining the commitment required for value creation, Gupta et al. (2004, p.242) defined entrepreneurial leadership as "leadership that creates visionary scenarios that are used to assemble and mobilize a 'supporting cast' of participants who become committed by the vision to the discovery and exploitation of strategic value creation" (Bagheri & Harrison, 2020).

Furthermore, entrepreneurial leadership is defined as influencing and directing the performance of group members toward the achievement of organizational goals that involve recognizing and exploiting entrepreneurial opportunities (Cai et al., 2019, p.204; Renko et al. 2015, p. 55).

In the same vein, entrepreneurial leadership is about "influencing others toward a goal through effective communication to recognize opportunity and share a vision about future possibilities that organizations could exploit to sustain competitiveness" (Fontana and Musa, 2017, p.5).

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According to the variety of perspectives adopted and definitions offered, scholars claimed that entrepreneurial leadership remains theoretical and lacks definitional clarity and appropriate tools to assess its characteristics and behaviors in the field (Harrison et al., 2015; Leitch and Volery, 2017).

Despite the growing interest, a definition of entrepreneurial leadership and theory remain underdeveloped, on the one side, there is no agreement among scholars on the definition of the concept (Leitch and Volery, 2017). While some scholars define entrepreneurial leadership based on the distinctive attributes and qualities of the leader, others focus on their specific leadership behavior and skills (Harrison et al., 2018; Bagheri & Harrison, 2020).

On the other side, there is no consensus among scholars on the dimensionality of the entrepreneurial leadership construct. While, the majority of scholars recognize entrepreneurial leadership as a multi-dimensional construct (Fontana and Musa, 2017; Gupta et al., 2004; Huang et al., 2014; Kim et al., 2017), empirical studies mostly conducted using a onedimensional measure (Bagheri and Akbari, 2018; Cai et al., 2018; Miao et al., 2018; Newman et al., 2018).

From the most common unidimensional perspective of entrepreneurial leadership, Renko et al. (2015) measured entrepreneurial leadership in eight items, applying it to students and young workers concerning the relationship of entrepreneurial leadership with entrepreneurial orientation, transformational leadership, and innovation-supportive leadership. However, this operationalization does not take into consideration how employees perceive the opportunistic capabilities of their leaders. The dominant framework of Gupta et al. (2004) of entrepreneurial leadership put forward five dimensions of entrepreneurial leadership, discovering its global and cross-cultural nature, these dimensions are framing the challenge, absorbing uncertainty, path clearing, building commitment, and specifying limits.

In a close operationalization to the Gupta et al. (2004) dimensions, Huang et al. (2014) developed a five-component entrepreneurial leadership measure included challenge formulation, uncertainty internalization, underwriting, commitment building, and defining gravity (Kim et al., 2017; Yu et al., 2020).

It is argued that the first three dimensions (Framing the challenge, Absorbing uncertainty, and Path clearing) relate to leader's ability to identify possible opportunities that can be seize. While the last two roles (Building commitment and defining gravity) relate to leader's ability to manage resources and inspire followers to exploit the opportunities to achieve organizational goals (Mehmood et al., 2021).

To sum up, empirical testing and development of appropriate measures for entrepreneurial leadership concept are scarce (Bagheri and Harrison, 2020). Therefore, this study focuses on understanding how entrepreneurial leaders influence entrepreneurial behavior of followers and direct the entrepreneurial processes of their business are limited in literature. Further advancement of entrepreneurial leadership theory requires a precise identifying of the factors that constitute the construct (Gupta et al., 2004; Leitch and Volery, 2017).

### **2.2 Innovation speed and quality**

Innovation has been the subject of extensive research; it is a broad topic of research, and increasingly different types of innovation are identified, as well as different stages of the innovation process and various levels of analysis (Mendoza-Silva, 2021).

According to Drucker (2014), innovation is defined as a creation of new products and services and application of new processes and management techniques, which enable organizations to create value and gain competitive advantage (Bhatti et al., 2020).

Instead of a single description of innovation, Rogers (1998) argued that there are five types of innovation: (1) introduction of a new product or a qualitative change in an existing product; (2) process innovations that are new to an industry; (3) the opening of a new market; (4) the development of new sources of supply for raw materials or other inputs, and (5) changes in industrial organization (Tseng and Tseng, 2019).

Thus, innovation is a complex and multidimensional concept that encompasses a separate but interrelated set of innovative processes. It is a concept that goes beyond technological innovation to include service innovation or business models (Apak et al., 2021). Others adopt a broad concept of innovation focuses on four dimensions: product innovation, process innovation, marketing innovation, and organizational innovation (Laeque and Babar, 2017; Migdadi, 2020).

Differently, this research focuses on the two prominent innovation performance capabilities in literature, namely innovation speed and quality. Prior studies argument concentrated on innovation as a knowledge-driven result affected by firms' strategic choice, behavior characteristics, and technology implementation. In complex and rapidly changing environments, speed and quality, which are the two main characteristics of innovation, have been indicated to affect firm performance (Wang et al., 2021).

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Consequently, the faster and better a firm can innovate, the more likely it will meet the needs of the market and fulfill business goals (Tseng and Wu, 2007). Thus, these two characteristics are most appropriate innovation that assesses ability of the organization to accelerate activities and build a competitive advantage on the one side; and on the other side innovation quality represents the effectiveness of innovation processes and their ultimate end (Iqbal, 2021).

Innovation speed refers to an organization's ability to reduce the time required to product or processes development and marketing compared to its competitors. Therefore, innovation speed is seen as a team-based efficiency that enables an organization to respond quickly to customer demands, gain a high market share and profits (Wang et al., 2021).

In the same mean, Innovation speed can be defined by the time elapsed between initial conception/definition of an innovation and the ultimate commercialization of new products, services, and related activities, building a competitive advantage relative to competitors with shortened product life cycles (Mardani et al., 2018).

Accordingly, the current research adopts the definition of innovation speed as "the rate at which innovation proceeds from idea generation to ultimate commercialization and an organization's capability to accelerate the creation of new processes or products as compared to its competitors within the industry with shortcomings product life cycle" (Iqbal et al., 2018).

On the other hand, innovation quality relates to the effectiveness of innovation processes and their end results, and is described as the extent to which an organization can add value to its products or services in terms of their features, cost, reliability, and flexibility (Wang et al., 2021). This characteristic helps organizations to perform better compared to their competitors by improving quality management and increasing responsiveness (Iqbal, 2021).

Although the quality of innovation is one of the most important factors for a firm implementing an innovation strategy to compete in the market, its identification may face more challenges due to the increasing complexity and difficulty of measurement (Mardani et al., 2018).

### **2.3 Strategic Flexibility**

Due to rapidly and increasing environmental changes, an organization ought to be more flexible, which leads to strategic flexibility become a hot research topic in management literature. Strategic flexibility refers to a firm's abilities to reallocate and reconfigure its organizational resources and processes to cope with environmental changes. It has been recognized as a source of competitive advantage (Su, 2022).

Strategic flexibility is defined as "the organization's ability to deal with ambiguities, uncertainties, and changes in the business environment, which is known as reengineering and restructuring (Hamokhalil and Alshikh, 2019).

Accordingly, strategic flexibility represents the ability of organizations to respond quickly to opportunities and changes in the environment (Brinckmann et al., 2019). Thus, the main strategic element of flexibility is the organization's ability to absorb and adapt to the changes occur in internal and external environment (Shalender and Yadav, 2019; Wang et al., 2019).

From the side of a proactive ability, Grewal and Tansuhaj (2001) define strategic flexibility as "the organization's ability to respond proactively or reactively to business opportunities and threats posed by changes in the economic and political environments" (Herhausen et al., 2021). While, from a reactive ability perspective, it is defined as "a company's ability to respond quickly to problems, rethink its activities and strategies, and better meet environmental requirements" ((Brozovic, 2018; Escrig Tena et al., 2011).

As the ability of a firm to reallocate and reconfigure its resource base, strategic flexibility is an important resource-related factor that significantly influences the firm's strategic decision (Zhou and Wu, 2010). In this sense, strategic flexibility is a capability to identify major changes in the external environment, to quickly commit resources to new courses of action in response to change, and to recognize and act promptly when it is time to reverse such resource commitments (Katsuhiko and Hitt, 2004, cited by Yang et al., 2020).

Regarding to operationalization of strategic flexibility, many studies adopted Sanchez's (1995) theoretical work, which focuses on the flexible allocation and coordination of resources in response to changing environments (e.g. Chen et al., 2017).

From different perspective, strategic flexibility is measured via strategic planning, using a three-item scale; the items are the evaluation and review of strategic plans; adjustments of strategic plans to changing environments; and strategic planning as continuous process (Brozovic, 2018). Strategy scholars, including Guo and Cao (2014) and Zahra et al. (2008), define SF as a firm's strategic capability to reallocate and reconfigure its organizational resources, processes, and strategies to respond quickly to opportunities, threats, and changes in the external market environment that meaningfully impact firm performance (Hensellek et al., 2023).

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Therefore, strategic flexibility is related to long-term organizational objectives and, in its most radical manifestation, requires significant qualitative changes within the organization. More specifically, strategic flexibility enables the development of strategic options that can either react or lead to the change (Shalender and Yadav, 2019).

In general, the positive strategic flexibility–performance relationship is stronger when strategic flexibility is measured in terms of proactively creating new opportunities, internal resource deployment and external competitive actions, compared to when it is not. While, measuring strategic flexibility in terms of reactivity (responding to change), variety (increasing options) and speed (timely response) does not affect the strategic flexibility–performance relationship. Furthermore it is found that the performance effect of strategic flexibility is stronger when performance is measured in terms of innovation outcomes rather than financial outcomes (Herhausen et al., 2021).

The current study adopts a proactive perspective to operationalize strategic flexibility by (1) building excess resources by hedging and sharing investments across business activities; (2) emphasis on firms deriving benefits from diversity in the environment; (3) importance that the firm puts on benefiting from opportunities that arise from variability in the environment; (4) a firm’s strategic emphasis on managing macro-environmental risk (political, economic and financial risk); and (5) the flexible allocation of human resources (Brozovic, 2018; Herhausen et al., 2021; Nadkarni and Herrmann, 2010; Xiu et al., 2017).

### **3. HYPOTHESES DEVELOPMENT**

#### **3.1 Entrepreneurial leadership and innovation speed and quality**

The direct relationship between entrepreneurial leadership and work outcomes of employees and teams has been confirmed in previous studies (Bagheri, 2017; Cai et al., 2019). For example, Yang et al. (2019) demonstrate a positive relationship between entrepreneurial leadership and turnover intention of employees under the condition of person-job fit. Also, on the multilevel analysis, Miao et al. (2019) conclude that CEO’s entrepreneurial leadership can enhance both team- and individual-level job performances in the top management level.

Although scholars have investigated the influence of leaders on innovative work outcomes in organizations (Hughes et al., 2018; Zheng et al., 2019), research to date has focused primarily on these well-researched leadership styles developed in the 1980s and 1990s, such as transactional, transformational and charismatic leadership (e.g. Al-Mansoori and Koç, 2019; Naguib, and Abou Naem, 2018).

One stream of research has recognized the significant role of leadership as catalyst for employee innovative performance (Hughes et al., 2018) according to its ability to shape work environment and control over resource allocation (Lee et al., 2020). This line of research has widely focused on transformational leadership (e.g. Afsar and Masood, 2018; Amankwaa et al., 2019), authentic leadership (Grošelj et al., 2020; Yamak & Eyupoglu, 2021), ethical leadership (Shafique et al., 2020) and more recently on servant leadership (Alikhani and Shahriari, 2022; Wang et al., 2019). However, the mixed findings of these leadership styles effects on innovation suggest a more specific and effective leadership style to support innovation that serves opportunity exploration and exploitation to cope with the challenges of complex and dynamic business environment and achieve competitive advantage through innovation i.e. entrepreneurial leadership.

On the other hand, many entrepreneurial leadership studies have recently focused on its impact on individual and group creativity and well been empirically examined in the literature at different settings (e.g. Cai et al., 2019; Wibowo and Saptono, 2018). However, the relationship between entrepreneurial leadership and innovation is still ambiguous (Aslam and Maitlo, 2019; Ince et al., 2023). Thus, it is important to understand the multidimensions of entrepreneurial leadership that lead to innovative outcomes.

Among these relevant studies, Fontana and Musa (2017) verified the impact of entrepreneurial leadership in enhancing all elements in the innovation process (i.e. idea generation, idea selection and development or idea conversion and idea diffusion). Consistently, innovation was considered as a limited concept encompasses employee innovative behavior which focusing on innovation associated with and driven by employees in an organization at the individual level (Zheng et al., 2019).

Furthermore, Newman et al. (2018) argue that increased entrepreneurial leadership results in high levels of IWB of employees. Similarly, Akbari et al. (2021) show that entrepreneurial leadership has a significant and positive impact on IWB of employees in ICT SMEs as well. Despite, the effectiveness of entrepreneurial leadership has drawn scholarly attention in recent years (e.g. Ahmed and Harrison, 2022), empirical evidence on the association between entrepreneurial leadership and innovative behavior is limited (Hoang et al., 2022; Kimbu et al., 2021).

Although there are affirmations that entrepreneurial leaders achieve their vision through recognizing and eliciting the potential capabilities of individuals and groups of employees and influencing them to generate new ideas and regulating their attitudes, thoughts, and behavior to implement the new ideas (Akbari et al., 2021; Hoang et al., 2022; Li et al., 2020; Mehmood

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et al., 2020), however, these were conducted on individual and group levels of investigation, while examining relationship at the macro organizational level is still empirically limited in the literature (Aslam and Maitlo, 2019; Paudel, 2019). Thus, few studies have explored the effects of leadership style on the innovation process and innovation performance of the business, while research on the impact of entrepreneurial leadership on organizational innovation is scarce (Al-Sharif et al., 2023; Aslam and Maitlo, 2019; Ince et al., 2023; Yu et al., 2020).

Scholars have constantly recognized entrepreneurial leadership as a peoplecentric leadership style (Newman et al., 2018) and emphasized its importance in added-value creation by encouraging followers to explore and exploit entrepreneurial opportunities (Renko, 2018), and motivating employees to engage in creative activities (Cai et al., 2019; Wibowo and Saptono, 2018). In addition, compared to other traditional styles of leadership, entrepreneurial leadership has been indicated to strongly connect with employee innovative behavior (Lee et al., 2020; Malibari and Bajaba, 2022) and organizational innovation performance in management research (Yu et al., 2020).

To the best of our knowledge, research on the impact of entrepreneurial leadership on innovation behavior and performance has been mostly conducted in the U.S., Europe and Asia-pacific countries having different procedures to influence new idea generation and implementation (Aslam and Maitlo, 2019; Iqbal et al., 2022; Mehmood et al., 2019; Ince et al., 2023). However, there is also no formally published work on the impact of entrepreneurial leadership on innovation speed and quality in developing African countries. In order to narrow this gap, this study is conducted to understand the impact of banks leaders' entrepreneurial leadership practices on innovation speed and quality in Egypt. The findings of this study highly contribute to the few studies on entrepreneurial leadership-innovation link in developing countries context, specifically in Egyptian banking sector.

Drawing on social learning theory (Bandura, 1977), it is suggested that individuals learn by observing and emulating others' attitudes and behaviors. Accordingly, leaders are a prominent source of role modeling due to their managerial position in the organization and their ability to utilize organizational resources such as rewards to foster desirable behaviors.

Therefore, entrepreneurial leaders foster followers' innovative behavior at workplace. Entrepreneurial leaders not only themselves engage in recognizing and exploiting opportunities but also emphasize the importance of such behaviors and thus act as role models and encourage followers to exhibit innovation and creativity in their work activities (Iqbal et al., 2022; Khan, 2022; Miao et al., 2018; Newman et al., 2018). This in turn on one hand, may enable the organization to respond quickly to customer demands, gain a high market share, and generate more profits, supporting organization's ability to reduce the time required to product or processes development and marketing compared to its competitors; and on the other hand, may support the effectiveness of innovation processes in the organization, adding value to its products or services in terms of their features, cost, reliability, and flexibility. Based on this discussion, the first two hypotheses are proposed as:

Hypothesis 1: Entrepreneurial leadership positively affects innovation speed.

Hypothesis 2: Entrepreneurial leadership positively affects innovation quality

### **3.2 Entrepreneurial leadership and strategic flexibility**

From the dynamic capability view of the firm, it is explored how firms build, integrate and reconfigure valuable asset positions. The firm's asset base in the broadest sense includes labor, capital, technology, knowledge, and property rights, and also the structures, routines and processes that are needed to support its productive activities (i.e. organizational structures and capabilities), thus, these dynamic capabilities denote the firm's ability to sense and seize opportunities, and reflect the entrepreneurial facet of management (Buccieri et al., 2021).

Scholars in strategy field defined strategic flexibility as a firm's strategic capability to reallocate and reconfigure its organizational resources, processes, and strategies to respond quickly to opportunities, threats, and changes in the external market environment that meaningfully impact firm performance (e.g. Zahra et al., 2008). Thus, strategic flexibility reflects a firm's ability to respond quickly "to unexpected consequences of predictable changes" i.e. strategic flexibility (Hensellek et al., 2023). Entrepreneurial organizations are described as agile, responsive, flexible, and embrace to change, consisting with the concept of strategic flexibility, which aims to measure organizations' intentions towards resource flexibility and coordination flexibility (Ali et al., 2021).

Some scholars have studied strategic flexibility in the field of entrepreneurship, examining its relationship with entrepreneurial orientation, such as Arif (2019) who defined the role of the entrepreneurial trend (creativity, risk-taking, and seizing opportunities) in achieving strategic flexibility (market, production, and human resources) in the Egyptian pharmaceutical sector. And in the Jordanian commercial banks context, it has been showed that the high level of availability of entrepreneurial orientation reaches to a high degree of strategic flexibility (AlHalaseh and Ayoub, 2021). While, there is evidence supports the

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joint positive effect of both strategic flexibility and governmental institutional environment for entrepreneurship interactively on entrepreneurial orientation in Chinese firms, whereas the joint effect of societal institutional environment for entrepreneurship and strategic flexibility is negative on entrepreneurial orientation (Su, 2022).

In more relevant studies, it is verified the closed relationship between entrepreneurial leadership and strategic flexibility, among these studies Fernández-Pérez et al. (2016) confirmed the positive impact of large networks of leaders (CEOs) on strategic flexibility, and that entrepreneurial decisionmaking (entrepreneurial strategic schemes and self-efficacy to recognize opportunities) mediates the effect of external social networks characteristics on strategic flexibility and organizational performance.

Moreover, entrepreneurship activities including innovativeness, risk taking and proactiveness significantly influenced strategic flexibility, specifically proactiveness was found to have the greatest influence, and furthermore strategic flexibility was investigated to have an important role in strengthening the effect of an entrepreneurial orientation on SMEs performance in fashion context in Malang (Kharisma et al., 2020).

Drawing on the upper echelons theory, Hensellek et al. (2023) revealed that strategic flexibility is an important strategic capability positively mediates the link between entrepreneurial leadership and venture performance. Among results via the German Startup Monitor data, entrepreneurial leadership was significantly and positively related to strategic flexibility.

Although scholars have shown the importance of entrepreneurial leadership for organizational outcomes in different environments, the exact mechanisms (i.e. strategic flexibility) and organizational context in the leadership–performance relationship are largely unknown (Huang et al., 2014; Renko et al., 2015). This research gap are particularly notable because many previous studies have not employed existing organizational theories such as upper echelons theory as an underpinning lens to investigate the effects of entrepreneurial leadership, in terms of characteristics and actions of a firm’s top executives, on organizational outcomes, thus neglecting important elements or mechanisms (Miao et al., 2019).

Consequently, this research proposes that entrepreneurial leadership behaviors affect the strategic dynamic capability (i.e. strategic flexibility) of the banks for two reasons. Firstly, entrepreneurial leaders can influence their followers by acting as entrepreneurial role models, thereby fostering entrepreneurial behavior among their followers (Miao et al., 2019); specifically, leaders can set an example by recognizing entrepreneurial opportunities in terms of new or improved ideas for products and services, and by exploiting them through the creative use of the resources at hand.

Secondly, entrepreneurial leaders tend to explore new approaches to entrepreneurial challenges rather than adhering to existing procedures for too long (Teece, 2012). This kind of thinking outside the box is transferred to their followers, which can lead to more flexible decisions in entrepreneurial organizations (Hensellek et al., 2023). Based on these arguments, I claim that entrepreneurial leadership behaviors impact their entrepreneurial banks’ strategic flexibility because of their role modeling and active guidance for employees (Bingham et al., 2019; Renko, 2017). Drawing on this, the third hypothesis is proposed as follows: Hypothesis 3: Entrepreneurial leadership positively affects strategic flexibility.

### **3.3 Strategic flexibility and Innovation speed and quality**

Organizations should regularly provide new products and quick processes. Without flexibility, the core resources and capabilities are vulnerable to risk, as strategic flexibility leads to superior performance (Herhausen et al., 2021). Thus, strategic flexibility is imperative for firms to overcome organizational inertia, break down organizational routines and sustain their explorative innovations (Wang et al., 2019; Zhou and Wu, 2010); Because of emphasizing the flexible use of resources and reconfiguration of processes, strategic flexibility reflects one type of dynamic capability that enables firms to achieve a competitive advantage in turbulent markets (Su, 2022).

According to the flexible use of resources and reconfiguration of processes, strategic flexibility in this sense enables firms to respond quickly to dynamic and unstable environmental changes by committing resources to new courses of action, and recognize and act promptly when it is time to halt or reverse existing resource commitments (Liu et al. 2013). In addition, strategic flexibility does not only allow firms to manage dynamically their resources for adapting to high-turbulent environments, but it can also enable firms to achieve the full potential of their key resources (Kamasak et al., 2017).

In search of the closed relationship between strategic flexibility and organizational innovation, Zhou and Wu (2010) indicated that strategic flexibility helps leverage technological capability to develop exploratory innovation. Li et al. (2020) found that strategic flexibility is positively related to radical innovation. In the education context, Ghorban and Gholipour (2018) showed that strategic flexibility has the greatest impact on manufacturing innovation and has the least impact on process innovation. In the same vein, it is confirmed that strategic flexibility has an important role in enhancing product innovation, particularly; marketing flexibility has a key role in product innovation (Beraha et al., 2018).

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In a Meta-Analysis study of Herhausen et al. (2021) summarized variety of theoretical perspectives advocating strategic flexibility, from the dynamic capabilities perspective it emphasizes the flexible use of resources and the reconfiguration of process, thus, affecting innovation, market and financial performance. In a more recent contribution, Mohammed et al. (2022) determined how strategic flexibility deals with innovation performance, identifying the relationship between explorative and exploitative innovation performance and bring out their positive relationships with strategic flexibility. Importantly, strategic flexibility can provide a potential base for benefiting a firm innovation. Strategic flexibility can help firms establish an open organizational structure, which has been identified as a driver of organizational innovation (Kamasak et al., 2017; Mohammed et al., 2022).

In this context, as Egyptian banks need more innovative and valuable products and services for their markets, strategic flexibility is mostly adapted concerning uncertainty and outweighs the gains from standardized or consistent strategy. By definition of strategic flexibility as firm's capability to respond quickly in order to change competitive conditions (Herhausen and Morgan, 2014), this capability is also about seek to support innovation implementation through coherent structure, resources, and processes (Kharisma et al., 2020). Furthermore, the positive strategic flexibility– performance relationship is stronger when strategic flexibility is measured in terms of proactively creating new opportunities, internal resource deployment and external competitive actions, compared to when it is not. It is also found that the performance effect of strategic flexibility is stronger when performance is measured in terms of innovation outcomes rather than financial outcomes (Herhausen et al., 2021).

Consequently, this evidence aligns with the literature that strategic flexibility can enable the organization to respond quickly (i.e. speed) to customer demands, gain a high market share, and generate more profits, by supporting organization's ability to reduce the time required to product/services or processes development and marketing compared to its competitors (Kamasak et al., 2017; Kharisma et al., 2020; Liu et al. 2013). In addition, strategic flexibility is suggested to facilitate an organization's response to environmental changes, leading to better innovation performance and support the effectiveness (i.e. quality) of innovation processes (Herhausen et al., 2021; De la Gala-Vela'squez et al., 2023). Therefore, based on these arguments, the following hypotheses are proposed:

Hypothesis 4: Strategic flexibility positively affects innovation speed.

Hypothesis 5: Strategic flexibility positively affects innovation quality.

### **3.4 The mediating role of strategic flexibility**

Extant studies have investigated the role of strategic flexibility in entrepreneurship context. For instance, Yousaf and Majid (2018) found that entrepreneurial orientation (EO) positively moderates the relationship of strategic flexibility to strategic business performance. Meanwhile strategic flexibility mediated EO effect on fashion SMEs performance (Kharisma et al., 2020). Furthermore, managers in the upper and middle management at the Jordanian commercial banks reported a high degree of strategic flexibility at their banks, and strategic flexibility plays a partial mediating role between EO (with all its dimensions) and organizational excellence (AlHalaseh and Ayoub, 2021).

In another stream of research, entrepreneurial Leadership is investigated to affect indirectly on organizational and innovation outcomes via various mediators. As, innovative environment has been suggested as a significant mediator in entrepreneurial leadership and employees' innovative behaviors relationship (Li et al., 2020). In Kuwait, entrepreneurial Leadership indirectly affects organizational performance through innovation capacity (Sawaeen and Ali, 2020). Utilizing social cognitive theory, Malibari and Bajaba (2022) confirmed the significant impact of entrepreneurial leadership on employees' innovative behavior through the innovation climate and intellectual agility. Al-Sharif et al. (2023) emphasized entrepreneurial Leadership's innovation effectiveness and the triggering process of innovation capability and provided various solutions for firms to demonstrate leadership and innovation practices in responding to uncertain environments. The empirical analysis revealed that entrepreneurial leadership impacted innovation performance directly and indirectly through the mediating role of innovation capability.

Although strategic flexibility is relatively interested in other types of leadership such as distributed leadership (Liao et al., 2018) and agile leadership (Fachrunnisa et al., 2020) and ambidextrous leadership (Jia et al., 2022), there are few studies have tested the role played by strategic flexibility in entrepreneurial leadership effects (Hensellek et al., 2023; Nguyen et al., 2021; Yu et al., 2020). Drawing on the upper echelons theory (Hambrick and Mason, 1984), organizational outcomes reflect the characteristics and actions of a firm's top executives. Thus, it highlights both strategy and structure as important elements to explain how top executives' entrepreneurial behaviors affect organizational performance (Neely et al., 2020) in terms of its innovation aspect. Herhausen et al. (2021) propose a meta-analytic research framework and found that strategic flexibility mediates -along with the environment moderation- the performance effect. Inspired by Herhausen et al. (2021)' research and



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according to the upper echelons theory, Hensellek et al. (2023) examined how this strategic capability (flexibility) influences the relationship between founders’ entrepreneurial leadership behavior and venture performance. Results showed that strategic flexibility fully mediates the entrepreneurial leadership–performance relationship.

However, strategic flexibility may not affect a firm’s innovation output by itself. Rather, it may enhance the value of existing technological capabilities in innovations. In this sense, strategic flexibility is one type of complementary organizational capability that can help the firm achieve the full potential of its key resources when used in combination. Thus, the moderated role of strategic flexibility is supported and enhanced the positive effect of technological capability on exploration innovation (Zhou and Wu, 2010).

This study expects that the relationship between entrepreneurial leadership and innovation speed and quality are mediated by strategic flexibility, due to the rapidly changing environments in banking industry characterized by changes in customer needs, technologies, and regulatory demands, thus, banks have to constantly adjust their strategies “to quickly and purposefully respond to competitive opportunities and threats” to survive, i.e., strategic flexibility (Brinckmann et al., 2019; Hensellek et al., 2023). Furthermore, there are limited empirical efforts on strategic flexibility as mediating mechanism in the relationship between entrepreneurial leadership and innovation performance (Hensellek et al., 2023; Nguyen et al., 2021; Yu et al., 2020). Therefore the following hypotheses are proposed:

Hypothesis 6: Strategic flexibility mediates the relationship between entrepreneurial leadership and innovation speed.

Hypothesis 7: Strategic flexibility mediates the relationship between entrepreneurial leadership and innovation quality.

A conceptual model (Figure 1) is presented to describe the proposed hypotheses.

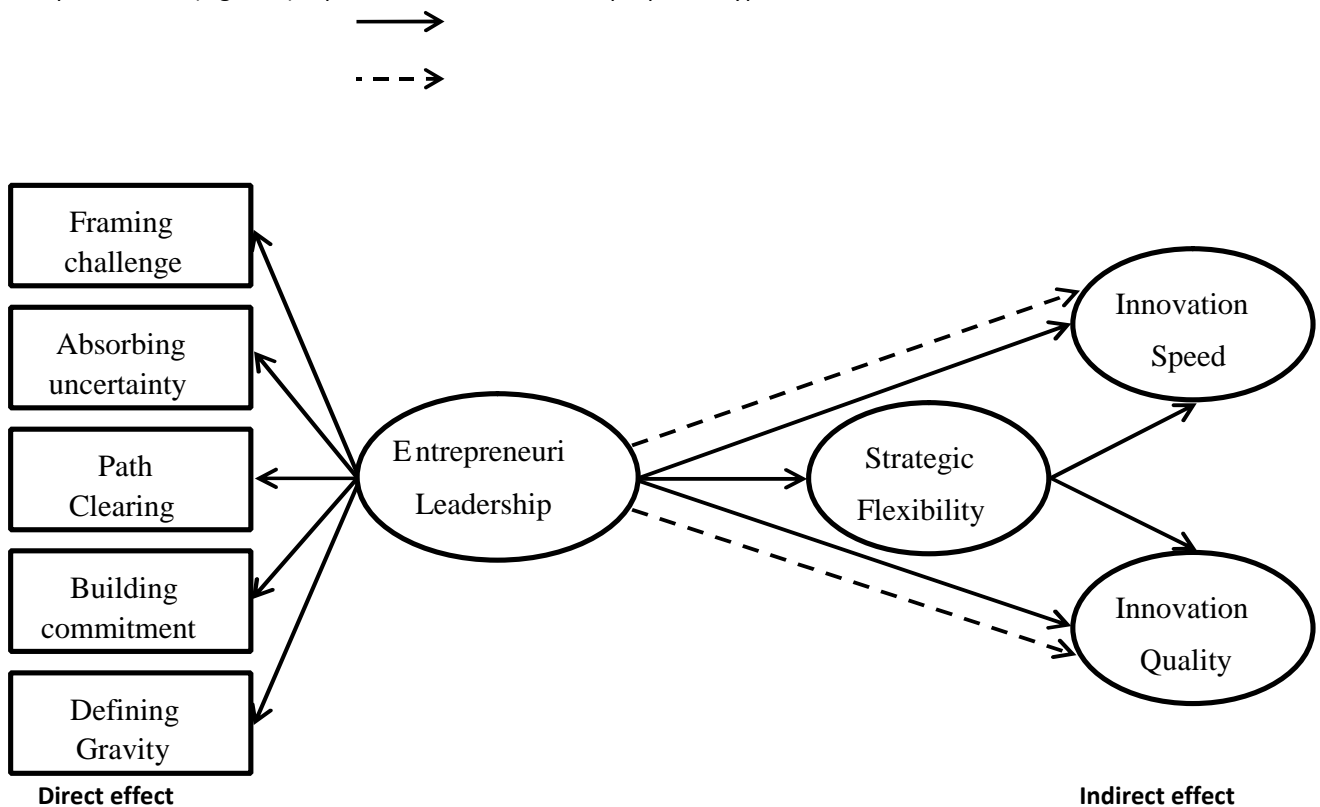


Figure 1. Conceptual model

## 4. RESEARCH METHODOLOGY

### 4.1 Measurement

To achieve the research objectives and test the above hypotheses, multi item scales from prior studies were adopted for the measurement of the research constructs, using a five-point Likert scale ranging from ‘strongly disagree’ (1) to ‘strongly agree’ (5) (see Appendix for the survey items).

Entrepreneurial leadership. Entrepreneurial leadership is operationalized as five dimensions were measured using the 26-items scale, including Framing challenge (5 items), Absorbing uncertainty (5 items), Path clearing (5 items), Building commitment (5 items), and Defining gravity (6 items). They are adopted from many relevant empirical studies (e.g. Huang et al., 2014; Yu et al.,

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2020; Simić et al., 2020; Bagheri and Harrison, 2020; Kim et al., 2017; Gupta et al., 2004). A sample of the items is “Set high standards of performance” and “Integrates followers into cohesiveness, working as a whole”.

Innovation speed and quality. Following studies of (Iqbal, 2021; Iqbal et al., 2020; Mardani et al., 2018; Wang et al., 2018), innovation speed and quality are operationalized and measured by ten items distributed in five items for both. A sample of the items is “Our organization is quick in coming up with novel ideas as compared to key competitors” and “Our organization does better in processes improving as compared to key competitors”.

Strategic flexibility. To evaluate strategic flexibility, a Five-item scale was used according to relevant empirical studies such as (Grewal and Tansuhaj, 2001; Hensellek et al., 2023; Nadkarni and Herrmann, 2010; Xiu et al., 2017; Yu et al., 2020). A sample of the items is “We frequently reconfigure resources to obtain benefits from environmental changes” and “We emphasize the flexibility of exploring and exploiting business opportunities”.

### 4.2 Sampling and data collection

Quota non-probability sampling method was used in order to confirm fair representation to population of leaders and managers at branches of the most two huge banks represent public and private sectors (National Bank of Egypt NBE and Commercial International Bank-CIB) located in Cairo, the capital, which is the center of the Egyptian economy for the service organizations and other sectors. Quota sampling is one of the most important methods of purposive sampling that combines advantages of accuracy to represent population units and ease of implementation (Sekaran and Bougie, 2016). In Egypt, 38 commercial banks include a network of 4,640 branches, with 130,385 employees work in, according to the latest public statistics. These banks are segmented to public (10 banks), private and foreign (22 banks), and only six joint investment (Central Bank of Egypt, 2022: 95).

Questionnaire survey method has been used for data collection. Given the nature of the constructs and our information needs, it was decided that the informants from top-level CEOs in their respective areas (e.g. department managers, senior staff) would be the most appropriate key informant to provide the information sought. Questionnaires were distributed among leaders and managers at branches of the target banks in Cairo. A total of 400 questionnaires were distributed 280 (70%) to NBE and 120 (30%) to CIB branches- relative to percentage of owned branches- and 296 items were returned from all, 194 from NBE and 102 from CIB branches. Of these, 13 questionnaires were discarded due to lack of complete and appropriate answers, and finally 283 questionnaires were used for the final analysis (70.75% response rate). Data analysis was completed through a two-stage structural equation modeling technique by AMOS. At the first stage, the measurement model was examined for construct validity and reliability, whereas at the second stage, the structural model and by implication the research hypotheses were tested (Hair et al., 2011). Brief sample information (sex, age, education and work experience) is showed in Table 2.

**Table 2. Sample characteristics**

Characteristic	Number	Percentage
sex		
Male	153	54 %
Female	130	46 %
Age		
30-40 years	72	25%
41-50 years	110	39%
Above 50 years	101	36%
Education		
Bachelor’s degree	160	57%
Master’s degree	99	35%
Doctorate	24	8%
Work experience		
Below 5 year	90	32%
5-10 years	98	35%
Above 10 years	95	33%

As stated in the table2. Most of the respondents (54%) were males compared to females (46%). The more of respondents (39%) were those age is between (41-50) years old, followed by the oldest employees those ages are above 50 years, while the

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youngsters (30-40 years) represent one fourth (25%) the participants. Respondents are well educated- (57%) have a bachelor's degree, and about (35%) have a master's degree, while those have doctorate are about (8%) only. The work experience level of respondents varied and relatively equalized in terms of respondents number where each category represents one third (33%) of respondents.

## 4.3 Common method bias

According to Podsakoff et al. (2003), due to the data was collected from a single source, common method bias may affect the relationships between the constructs. Thus, the common method bias is a potential threat to the validity of the study (Ince et al., 2023).

Therefore, it is important to assess common method bias and check for the existence of the systematic error variance through using the Harman's onefactor method to determine whether a single-factor model with all the measurement items accounts for the majority of the variance. First factor accounted for only 36.17% of the total variance (less than 50%), referring no serious common method problem. Furthermore, One-factor model CFA is performed to determine the existing of common method bias. Through comparing the fit between the one-factor model and the measurement model with only traits factor, the results showed that one-factor model yielded fit indices ( $\chi^2/df = 1635.538/169 = 9.68$ ; GFI = 0.60; CFI = 0.68; IFI = 0.68; RMSEA = 0.18) that were unacceptable and significantly worse than those of the current measurement model with ( $\chi^2/df = 728.454/163 = 4.46$ ; GFI = 0.80; CFI = 0.88; IFI = 0.88; RMSEA = 0.11).

These results suggest that measures of constructs used in the analysis did not suffer from common method bias.

## 5. RESULTS

### 5.1 Measurement validity and reliability

To assess the validity and reliability, the measurement scales are investigated whether demonstrate content validity, discriminant validity, convergent validity (AVE), and internal consistency and composite reliability. Since the scales were generated directly from prior researches, it is assumed that scales have content validity. The confirmatory factor analysis (CFA), which represents the measurement model of SEM, was used to evaluate the convergent and discriminant validity of the constructs (Fornell and Larcker, 1981). As shown in Table3:

**Table 3. Measurement model results**

<u>Constructs</u>	<u>Item</u>	<u>Standardized Item Loading</u>	<u>Critical Value</u>
Entrepreneurial leadership	V1	.854	-
	V2	.771	15.153
	V3	.855	17.923
	V4	.890	19.067
	V5	.681	12.816
Strategic flexibility	V6	.817	-
	V7	.760	14.508
	V8	.882	18.004
	V9	.841	16.757
	V10	.851	17.064
Innovation speed	V11	.911	25.244
	V12	.776	17.570
	V13	.786	17.991
	V14	.820	19.612
	V15	.918	-
Innovation quality	V16	.682	10.486
	V17	.843	12.613
	V18	.526	8.166

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V19	.760	11.597
V20	.709	-

As showed in the table3, all the standardized item loadings are greater than 0.50 and statistically significant ( $p < 0.01$ ) at high critical t values ranging from 8.166 to 25.244. This results show that all indicators are significantly related to their underlying theoretical constructs. Furthermore, Cronbach's alpha, composite reliability (CR) and AVE were applied to assess reliability and convergent validity (see table4).

**Table 4. Reliability and Validity of Measurement scales**

Constructs	Cronbach's alpha	Composite reliability	*AVE
Entrepreneurial leadership	.946	.987	.939
Strategic flexibility	.916	.986	.935
Innovation speed	.923	.990	.954
Innovation quality	.832	.971	.872

\*AVE and CR were calculated using Fornell and Larcker's (1981) formulas;

AVE=  $\frac{\text{Sum of Squared Standardized Loadings}}{\text{Sum of Squared Standardized Loadings} + \text{Sum of indicator Measurement Error}}$

CR =  $\frac{\text{Sum of Standardized Loadings}_2}{\text{Sum of Standardized Loadings} + \text{Sum of indicator Measurement Error}}$

As seen in Table4, the values of Cronbach's alpha and CR for all constructs are higher than 0.7. Thus, all the constructs have high internal consistency reliability. AVEs values confirm the convergent validity of the constructs, as they are higher than 0.5, providing support for convergent validity (Fornell and Larcker, 1981; Hair et al., 2011)

From analysis results, also, discriminant validity of the constructs is evaluated; accordingly, the square root of AVE for each latent construct was greater than its correlation with other constructs, so discriminant validity was confirmed (see Table 5).

**Table 5. Correlation and Discriminant validity of Measurement**

Constructs	Entrepreneurial leadership	Strategic flexibility	Innovation speed	Innovation quality
Entrepreneurial leadership	(.969)			
Strategic flexibility	.484**	(.966)		
Innovation speed	.563**	.861**	(.976)	
Innovation quality	.580**	.574**	.634**	(.933)

(Diagonal) shows the square root of AVEs.

\*\* $p < .01$ .

Finally, the CFA model is used to check the measurement model fits the data reasonably well. The loadings of the measurement items on their factors were all significant ( $p < 0.05$ ). Furthermore, Acceptable fit was obtained based on several goodness of fit indices such as CMIN/DF (= 4.46) which is less than 5, GFI (.80), CFI (.88), IFI (.88) and TLI (.86) all are close to 0.90, and RMR (.05) and RMSEA (.11), showing all achieve the recommended threshold (Byrne, 2010; Kline, 2016). Also, the parsimonious normed fit index (PNFI) is 0.73, above the cut-off point of 0.70. The CFA results, thus, indicated that the measurement model fits the data reasonably well, allowing proceeds to the structural model stage (Figure 2.).

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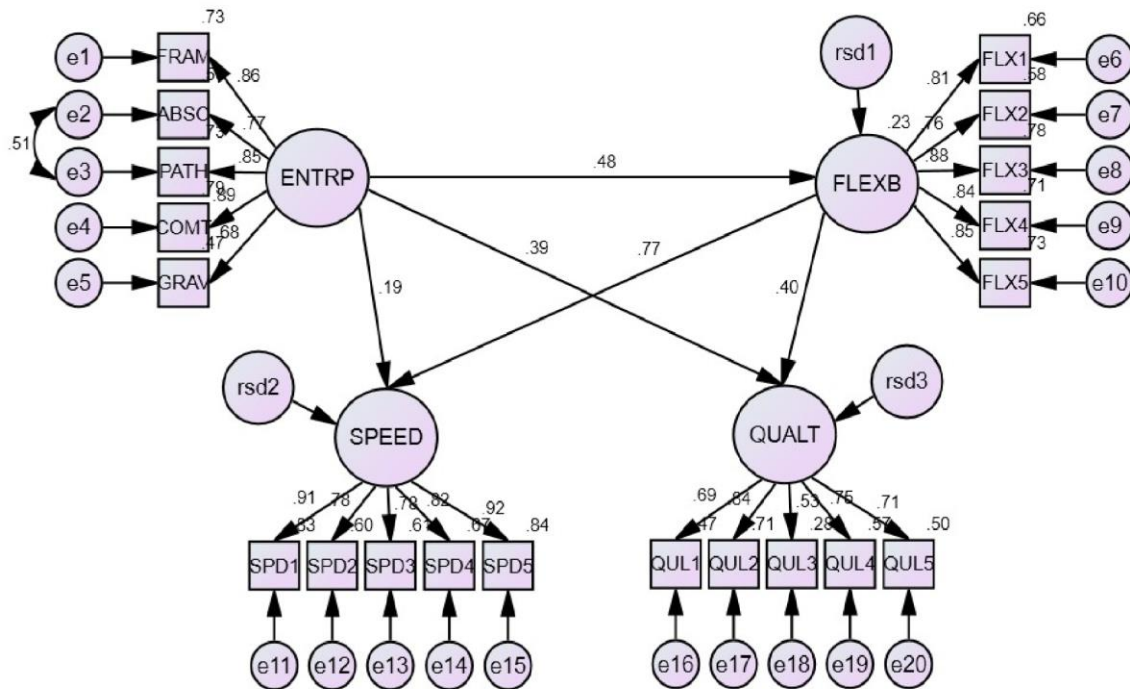


Figure 2. Results of SEM analysis

## 5.2 Hypotheses testing

After assessing and validating the measurement model and confirming its fitness, the structural equation modeling (SEM) was used with the maximum likelihood estimation method to test the research hypotheses. Generally, all the hypotheses of the proposed model were supported, and the validity and reliability of the model were confirmed. According to coefficients of standardized direct effect, the results indicated that entrepreneurial leadership has a direct positive and significant impact on innovation speed ( $\beta = 0.194$ ,  $T\text{-value} = 4.467$ ) and innovation quality ( $\beta = 0.393$ ,  $T\text{-value} = 5.785$ ). Therefore, hypotheses H1 and H2 are supported. It is also showed that entrepreneurial leadership has a positive and significant relationship with strategic flexibility ( $\beta = 0.484$ ,  $T\text{-value} = 7.601$ ), thus H3 is confirmed. Furthermore, strategic flexibility also has a positive and significant impact on innovation speed ( $\beta = 0.770$ ,  $T\text{-value} = 13.846$ ) and innovation quality ( $\beta = 0.401$ ,  $T\text{-value} = 5.882$ ), supporting H4 and H5. All significance levels of effects are at P values less than 0.01 (see table 6.).

Table 6. Results of the structural analysis

Paths	Estimate	B	S.E.	C.R.	P
ENTRP → SPEED	.257	.194	.058	4.467	***
ENTRP → QUALT	.352	.393	.061	5.785	***
ENTRP → FLEXB	.627	.484	.083	7.601	***
FLEXB → SPEED	.787	.770	.057	13.846	***
FLEXB → QUALT	.277	.401	.047	5.882	***

Consequently, the linear structural equations can be constructed, representing direct effects paths as following:

$$\text{Eq.1 FLEXB} = (.484) \text{ENTRP} + \text{rsd1}$$

$$\text{Eq.2 SPEED} = (.194) \text{ENTRP} + (.770) \text{FLEXB} + \text{rsd2}$$

$$\text{Eq.3QUALT} = (.393) \text{ENTRP} + (.401) \text{FLEXB} + \text{rsd3}$$

With regard to the indirect effect of entrepreneurial leadership practices on innovation speed and quality in Egyptian commercial banks through strategic flexibility, it has been verified through using the bias-corrected bootstrapping analysis to calculate the estimates and confidence intervals of the indirect effects with 500 replications (Ince et al., 2023). The results, at ( $p < 0.01$ ), indicated that strategic flexibility significantly mediates the relationship between entrepreneurial leadership and both

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innovation speed and quality, so H6 and H7 are supported. Furthermore, EL and SF explain 78% of variance in innovation speed and 47% of innovation quality, and EL explains 24% of variance in strategic flexibility (see table 7).

**Table 7. Results of mediating hypotheses and R<sup>2</sup>**

Indirect Effect	Estimate	*Std. Estimate	P	R <sup>2</sup>
ENTRP → FLEXB	-	-	-	.235
ENTRP → FLEXB → SPEED	.494	.373	.001	.776
ENTRP → FLEXB → QUALT	.174	.194	.001	.467

\* Std. Standardized Indirect Effects

## 6. DISCUSSION AND IMPLICATION

Building on the upper echelons theory and dynamic capability view of organization, this study shows that strategic flexibility is meaningful mechanism to better understand how leaders can and should operate in their banking organizations to facilitate innovation outcomes (Fontana and Musa, 2017; Yu et al., 2020; Malibari and Bajaba, 2022). All the hypotheses are supported; specifically, the results show that entrepreneurial leadership positively affects strategic flexibility consistent with previous research (such as Kafetzopoulos et al., 2022), which then increases entrepreneurial banks innovation outcomes i.e. speed and quality (De la Gala-Velásquez et al., 2023; Mohammed et al., 2022).

Results also find that entrepreneurial leadership does not only directly impact innovation speed and quality but is indirectly mediated by strategic flexibility capability, thus, this corresponds to some of studies' conclusion (AlHalaseh and Ayoub, 2021; Hensellek et al., 2023; Malibari and Bajaba, 2022; Nguyen et al., 2021; Yu et al., 2020), referring to the entrepreneurial leaders' effectiveness to identify possible opportunities and manage resources and inspire followers to exploit the opportunities to achieve organizational goals, think outside the box and motivate their followers, which can lead to more flexible decisions. Consequently, higher levels of strategic flexibility cause innovation easier and better and increase banks' competitiveness (Herhausen et al., 2021; Li et al., 2020; Mohammed et al., 2022).

Therefore, this study explores the black box relating to how the entrepreneurial leadership increased the level of Egyptian banks' innovation speed and quality based on one of the most important dynamic capabilities, i.e., strategic flexibility, and thus raises banks' competitiveness accordingly the proposed model.

Theoretically, this study contributes to several streams of entrepreneurship research. First, despite the growing interest in entrepreneurial leadership in businesses, organisations and leadership domains (e.g. Bagheri, and Harrison, 2020; Clark et al., 2019; Hensellek et al., 2023), few researchers have attempted to develop a measure to assess entrepreneurial leadership skills, qualities and behavior. Moreover, majority of previous studies used a total score of entrepreneurial leadership of Renko et al.(2015)'s ENTRELEAD without providing contributions to which underlying dimensions of entrepreneurial leadership are more effective (Bagheri and Akbari, 2018; Hensellek et al., 2023; Newman et al., 2018), thus, this study examined the multi-dimensional nature of the construct in a developing context (Egypt). Specifically, focus was on the previously identified dimensions including framing challenge, absorbing uncertainty, path clearing, building commitment, and defining gravity (Gupta et al., 2004; Huang et al., 2014; Yu et al., 2020). Second, the study provides a new understanding of the innovation mechanisms of entrepreneurial leadership in the context of entrepreneurial banks. Prior research has shown that entrepreneurial leadership can positively affect both individual employee's innovative behavior (Akbari et al., 2021; Bagheri, and Harrison, 2020; Lee et al., 2020) and organizational innovation (Yu et al., 2020). Third, the relationship between entrepreneurial leadership and innovation speed and quality is not straightforward, but occurs via mediating mechanisms (Li et al., 2020; Malibari and Bajaba, 2022). However, further empirical research is needed to better understand how entrepreneurial leadership can enhance innovation, especially on organizational level of analysis. Fourth, this study adopts a proactive perspective to operationalize strategic flexibility, seeking to address a 'conceptual schizophrenia' characterizing its literature by scholars across the strategy, management, innovation and entrepreneurship disciplines. As evident in the lack of cumulative theory development, multiple theoretical tensions and the need to pursue further attempts to consolidate the field (Herhausen et al., 2021).

Practically, findings from this study have a number of implications for the managers and leaders of Egyptian commercial banks who want to enhance the innovation capabilities of their employees so as to improve the progress and competitiveness of their business. First, the findings of this work assist the current and prospective business leaders and the entrepreneurs to identify the key roles that they can play in order to improve innovation capabilities among their employees and develop a

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promising and innovative environment to streamline the innovation process. Second, for entrepreneurial-based strategic flexibility in compatible with technological capability, it would be more advantageous for them to support and enhance the positive effect on speed and quality of organizational innovation by focusing on the flexible allocation and coordination of resources in response to changing environments. Further, managers should also ensure that recruits are employed under the leadership that displays entrepreneurial initiatives and behaviors. As entrepreneurial leaders can be seen as directing and assisting followers in achieving organizational goals by recognizing and exploiting opportunities via their creative contribution and enabling them to initiate such innovative endeavors as creating new options, situations, propositions and benefits, i.e. by creatively developing innovative practices for the benefit of the organization.

### 7. CONCLUSION AND FUTURE RESEARCH

This study proposes a conceptual framework that empirically tested the relationship between entrepreneurial leadership (EL hereafter) and innovation speed and quality through the mediating role of strategic flexibility (SF hereafter). The results indicated that strategic flexibility has significantly mediated the relationships between EL and both innovation speed and quality. This study advances the EL literature by examining the mediating role of SF on the relationship of EL and innovation performance capabilities (speed and quality). This study, thus, fills a significant gap in the literature, by providing an important empirical contribution for researchers and will offer a valuable perspective for banking practitioners. In examining the EL and innovation speed, and EL and innovation quality connection, I have looked at the SF mechanism as the black box exploring how EL and innovation link. The results suggest that EL enhances innovation speed and quality indirectly through the mediation of SF. In these indirect paths, it is found that SF enhances innovation speed and quality as well. Thus, SF acts as a significant mediator between EL and innovation speed and quality.

However, there are several methodological limitations for this study. First, the cross-sectional design was used to conduct questionnaire. This is a limitation since the cross-sectional research design provides only insights about existing relationships at a certain point of time, and it does not allow the derivation of any causal claims from results. For this reason, a longitudinal design of research can provide information about causal relationships and enrich our understanding of the aforementioned associations. Second, since this study was implemented in a distinct geographical and developing cultural context such as Egypt, sampling plan may be a limitation. Third, this research is limited in investigating the direct and indirect effects of EL on innovation speed and quality through SF. Other factors should be investigated for a better understanding of the mechanism between EL and innovation in future studies. Fourth, the self-rating of EL is used in the current study. This may be regarded as a limitation, thus, future research could improve this deficiency by using other-rating evaluation of perceived EL. Finally, the proactive perspective is adopted for SF (creating new opportunities) in terms of the variety of available strategic options and/or the speed (timely response) of pursuing a strategic option; however, it can also react (responding to change) internally through resource deployment and/or externally via competitive actions in the future research, and considering SF as a multidimensional construct could be important contribution in EL literature.

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