

Exploring the relationship between corporate entrepreneurship and firm performance: the mediating effect of strategic entrepreneurship

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Abstract

Purpose – Strategic entrepreneurship rejuvenates firms to achieve a competitive advantage in current markets. It is effective in forming corporate entrepreneurship and involves the simultaneous opportunity-seeking and advantage-seeking behaviors of firms. The aim of this paper is to investigate the mediating effect of strategic entrepreneurship in the relationship between corporate entrepreneurship and firm performance through the resource-based view.

Design/methodology/approach – Adopting a quantitative research method and structural equation modeling technique, structural models were developed to test the research hypotheses. To this end, a questionnaire survey was conducted among 103 financial technology companies in Iran.

Findings – The results support the proposed hypotheses. The findings indicate that corporate entrepreneurship and strategic entrepreneurship are positively related to firm performance. They also reveal the mediating effect of strategic entrepreneurship in the relationship between corporate entrepreneurship and firm performance. In the developing context of Iran, financial technology companies are more likely to employ corporate entrepreneurship and strategic entrepreneurship to achieve firm performance.

Originality/value – The current study contributes to the literature on strategic entrepreneurship by employing a resource-based view and exploring the relationship between firm capabilities (i.e. strategic entrepreneurship) and firm performance. Applying a resource-based view leads to a better understanding of strategic entrepreneurship. Finally, this study singles out and discusses the various features that characterize the implementation of strategic entrepreneurship by Iranian financial technology companies to reach a competitive advantage.

Keywords Corporate entrepreneurship, Strategic entrepreneurship, Firm performance, Resource-based view

Paper type Research paper

Introduction

Changes in markets have led firms to face a high level of uncertainty brought about by constant alteration (Back and Bausch, 2019). Many influential factors have placed enormous pressure on entire businesses which, in turn, have made them become more intelligent and proactive (Atiq and Karatas-Ozkan, 2013). Firms have to be agile in recognizing new opportunities in the current changing markets (Coccia, 2016). There have been various efforts in firms to examine their internal features (Kazlauskaitė et al., 2012). Currently, there is a growing interest in the employment of strategic entrepreneurship as a firm-level behavior in the augmentation of a firm's innovative skills and the achievement of competitive advantage (Acs et al., 2009). The adoption of strategic entrepreneurship is significant, since it constitutes a new, multifaceted set of challenges on both theoretical and practical levels (Acs et al., 2012).



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On a theoretical level, firms require to continually evaluate the outcomes, which effect, elucidate and shape the atmosphere wherein strategic entrepreneurship flourishes.

On the other hand, on a practical level, firms must identify fundamental principles to lead their capabilities and resources to institute valuable entrepreneurship strategies (Kim, 2018). Boudreaux (2020) considers strategic entrepreneurship a new concept in the realm of entrepreneurship, which can be assigned as a combination of strategic management and entrepreneurship. Boukamcha (2019) argues that entrepreneurship and strategic management are dynamic capabilities that directly relate to business efficiency. He explains that one of the challenges that businesses face is how to obtain and maintain a competitive advantage. Utilizing strategic entrepreneurship helps firms to address the rapid changes of the environment, as well as the changes that might threaten businesses and affect their nature (Santos *et al.*, 2019; Sharma, 2019). Considerable anecdotal evidence suggests that strategic entrepreneurship is a common practice in successful firms. It revitalizes firms to be more innovative, risk-taking and aggressive in increasing their competitive advantage and, ultimately, improving their performance.

According to Kozlov (2018), environmental heterogeneity and uncertainty create a host of strategic challenges for today's firms. To cope with both present and future core competencies, firms increasingly rely on the operative use of corporate entrepreneurship (Klein *et al.*, 2013). These facts make it imperative for corporate entrepreneurs to actively contribute to designing and implementing diverse strategic entrepreneurship scenarios for corporate entrepreneurship actions (Puranam *et al.*, 2014). Recent entrepreneurship literature reveals a consensus about the idea that successful corporate entrepreneurship is linked to improved firm performance (i.e. Tipu and Fantasy, 2018; Sánchez-Gutiérrez *et al.*, 2019). Roundy and Bayer (2019) have suggested that corporate entrepreneurship is increasingly recognized as a legitimate path to high levels of firm performance. Understanding corporate entrepreneurship as a valid and effective practice with tangible benefits occurs across a firm's boundaries (Kyrgidou and Hughes, 2010). Salas *et al.* (2010) have cited the importance of corporate entrepreneurship as a growth strategy in forming new corporate ventures and startups. The primary emphasis of this area is on different corporate startups and their compatibility with the corporation.

According to Shen (2018), startups strive to exploit product-market opportunities through innovative and aggressive behavior. Mazzei *et al.* (2017) have suggested that entrepreneurial and innovative actions are necessary for firms of all sizes to flourish. Developing an internal atmosphere that promotes a firm's interest in and commitment to opportunity recognition, as well as innovations that may result from it, can contribute to competitive advantage in today's turbulent markets (Shirokova *et al.*, 2013). A valuable and appropriate internal organizational environment is the product of effective strategic entrepreneurship (within the context of corporate entrepreneurship) by corporate entrepreneurs (Olander *et al.*, 2016).

The current study considers several theoretical gaps that exist in entrepreneurship literature. The review of current literature indicates that there still exists a void in our understanding of the outcomes of strategic entrepreneurship. So far, the review of the existing literature has not identified studies explicitly exploring the relationship between specific dimensions of strategic entrepreneurship (namely, entrepreneurial mindset, entrepreneurial culture, entrepreneurial leadership and strategic management of resources) and firm performance. Defining different dimensions of strategic entrepreneurship would expedite progress in the field by enabling researchers to investigate the correlates and effects of each dimension on firm performance. In line with this, there is a need to promote the advancement of theories that recommend practical actions that drive the innovative behaviors of firms.

Furthermore, recent conceptual evidence in the literature proposes strategic entrepreneurship as a configuration mechanism and suggests that strategic

entrepreneurship acts as a mediator and serves as the mediating effect that links corporate entrepreneurship to firm performance. The exact mediating role of strategic entrepreneurship in the studies pertaining to the relationship between corporate entrepreneurship and firm performance has not been sufficiently empirically tested. As such, the inclusion of strategic entrepreneurship as the mediating factor, which will spill over into the subsequent outcome in the present study, will help to shed light on the underlying mechanism that is responsible for the relationship between corporate entrepreneurship and firm performance. Therefore, a much more systematic study would examine the mediating effect of strategic entrepreneurship on the relationship between corporate entrepreneurship and firm performance, which attempts to fill this gap in the literature. Considering the mediating impact of strategic entrepreneurship in the relationship between corporate entrepreneurship and firm performance could direct entrepreneurship literature toward obtaining a model for strategic entrepreneurship implementation.

The existing literature lacks a concrete, integrative theory, and a specific framework for strategic entrepreneurship. As a stepping stone, this study adopts a resource-based view to construct an integrated theoretical framework for strategic entrepreneurship by clarifying the comprising dimensions, and empirically studies appropriate cases to identify the connections of strategic entrepreneurship. The resource-based view highlights the role of resources and capabilities in explaining performance differences among firms (Barney, 2001). Strategic entrepreneurship is an essential, intangible asset that facilitates entrepreneurial activities within firms. The potential influence of resources and capabilities on firm performance provides the necessary impetus for the present study to employ a resource-based view in investigating the relationships between strategic entrepreneurship and firm performance. The resource-based view of the firm is pertinent, as the study variables such as corporate entrepreneurship and strategic entrepreneurship have theoretical underpinnings in the resource-based view. Since the general understanding of the functions of strategic entrepreneurship remains rather superficial, it is necessary to open a new avenue in the entrepreneurship literature by clarifying strategic entrepreneurship that should be occurring in each process of corporate entrepreneurship and firm performance. Therefore, there is still a theoretical gap and lack of research in the current literature; hence, the present study tries to shed light on the topic and fill the foregoing gaps in the literature.

The current paper contributes to the entrepreneurship literature by employing a resource-based view and exploring the relationships between a firm's capabilities (i.e. strategic entrepreneurship) and its performance.

On the other hand, on the practical level, greater diversity in the geographic and industrial scope is also needed in the research on strategic entrepreneurship. Most previous research has used data collected in Western contexts, particularly the United States and Europe. The present study, however, explores the stability of these results by data amassed from financial technology companies in Iran. Financial technology is a technology innovation that aims to compete with traditional economic methods in delivering financial services (Shaikh *et al.*, 2020). It is an emerging industry that exploits technology to improve activities in finance. Iranian financial technology companies require strategic entrepreneurship road maps to reinforce their strategic entrepreneurship and convert opportunities to new business models and develop new products and services. Hence, strategic entrepreneurship is a tool for firms to gain competitive advantage and sustain a higher level of performance.

All in all, the current research employs the resource-based view to examine how firms operating in a turbulent competitive atmosphere deploy strategic entrepreneurship to achieve competitive advantage.

Theory development and hypotheses

Corporate entrepreneurship

Corporate entrepreneurship asserts that organizations are featured as being almost entrepreneurial in their strategy-making style, relying on the extent to which they are proactively hunting for a new set of opportunities for accomplishing dramatic growth (Kraus *et al.*, 2011). As a firm-level phenomenon, corporate entrepreneurship has surfaced from the strategic management literature (Acs *et al.*, 2016). According to the resource-based view, corporate entrepreneurship is a significant indicator and a crucial measure of converting resources for competitive purposes (Brous *et al.*, 2019). Corporate entrepreneurship develops products, administrative innovations, procedures and methods of thinking for organizations to revitalize and redefine both their structure and their associated markets (Wiklund and Shepherd, 2005). Felix *et al.* (2019) have pointed out that corporate entrepreneurship may be formal or informal in creating new businesses in established companies through product and process innovations. Corporate entrepreneurship is a tool for business development, revenue growth and profitability enhancement (Davidsson, 2015). The pursuit of corporate entrepreneurship is driven by various challenges, including global competition, interest in organizational efficiency for greater profitability, dramatic changes in the marketplace and the perceived limitations in the traditional methods of corporate management (Escribá-Carda *et al.*, 2020). Gallouj (2017) draws an important distinction between conservative and entrepreneurial firms based upon their levels of (a) propensity to innovation and (b) risk-taking behavior. Harms *et al.* (2012) have indicated that firms become entrepreneurial when they innovate boldly and regularly while taking considerable risks in their product-market strategies. In the context of the current study, corporate entrepreneurship is defined as a firm's strategic orientation, including a set of commitments and actions around entrepreneurial behavior throughout an established company (Wiklund and Shepherd, 2005).

Dimensions of corporate entrepreneurship

While corporate entrepreneurship has universally been seen as a firm-level phenomenon, the nature or dimensionality of this entity has been an issue of extensive discussion within entrepreneurship literature. The prominent dimensions of corporate entrepreneurship can be drawn from a review of entrepreneurship and strategy literature (e.g. Wiklund and Shepherd, 2005; Simsek *et al.*, 2007). Entrepreneurship researchers have made advancement in ample dimensions to substantiate the perception of corporate entrepreneurship. According to Coccia (2016), a firm is considered highly entrepreneurial when it habitually embarks on innovative actions, takes bold risks, seizes opportunities and performs sooner than its rivals. Accordingly, in order to be considered entrepreneurial, a firm should possess such characteristics as innovativeness, risk-taking and proactiveness (Orobía *et al.*, 2020). The unidimensional conceptualization of corporate entrepreneurship has been embraced by the enormous body of mainstream research in entrepreneurship literature. The present study uses innovativeness, risk-taking, proactiveness, competitive aggressiveness and autonomy as the most well-known dimensions of corporate entrepreneurship.

One of the primary factors that are regarded as an essential component of corporate entrepreneurship is innovativeness. It contributes to the success of a firm and the degree to which the firm can be deemed creative and innovative (Coccia, 2016; Acs *et al.*, 2016).

Another vital alternative for earlier definitions of entrepreneurship has pivoted toward the enthusiasm to join in the moderated business risks (Wiklund and Shepherd, 2005). According to Davidsson (2015), risk-taking is venturing into the unknown, committing resources and capital to projects with little or no guarantee of success. Cowling and Lee (2017) have pointed out that when entering new markets with new products or services, entrepreneurial organizations should promote experimentation because they will be operating within vague

and unsure environments. As a result of operating under such circumstances, entrepreneurial organizations become tolerant of failure and are innately under risky conditions (Kraus *et al.*, 2011).

The third dimension of corporate entrepreneurship is proactiveness. A firm faced with various uncertainties must exhibit proactive characteristics to struggle aggressively by way of instigating audaciousness (Coccia and Watts, 2020). The flexibility of the management to adjust and alter situations, the ability to anticipate future implications and being opportunistic are demonstrated as the dimensions of proactiveness (Sánchez-Gutiérrez *et al.*, 2019). The characteristics of proactive behavior may also include a continuous search for new market possibilities and opportunities (Gomez and Rangus, 2018).

Competitive aggressiveness refers to how firms react to competitive trends and demands that already exist in the marketplace (Kang *et al.*, 2016). More specifically, it is the degree to which a firm is challenged on how it successfully penetrates new markets and overcomes competition among rival firms (Barreto and Patient, 2013). Werthes *et al.* (2018) have defined competitive aggressiveness as a managerial tendency conveyed in the form of a firm's willingness to dominate rivals in the markets. Finally, autonomy pertains to entrepreneurs' self-regulating actions in formulating an idea and assisting with the development of new visions from an idea to completion (De Winnaar and Scholtz, 2019).

Strategic entrepreneurship

Atiq and Karatas-Ozkan (2013) have defined strategic entrepreneurship as a set of activities through which firms employ entrepreneurial opportunities to create wealth and competitive advantages. According to Barreto and Patient (2013), strategic entrepreneurship involves both strategic (i.e. advantage-seeking) and entrepreneurial (i.e. new opportunity-seeking) activities. Strategic entrepreneurship is considered an entrepreneurial action with a strategic standpoint (Boudreaux, 2020; Canestrino *et al.*, 2019). Firms that can identify opportunities but fail to exploit them do not realize potential wealth creation (Brockman, 2014). Likewise, firms with current competitive advantages, but without newly identified opportunities to exploit these advantages, expose their stakeholders to increased risk, so much so that market changes may diminish the rate of wealth creation or even reduce previously created wealth (Kim, 2018; Kang *et al.*, 2016; Klein, 2016). The focus of strategic entrepreneurship is wide-ranging and diverse, drawing on research from such disciplines as management and economics, including organizational behavior and organization theory (Boudreaux, 2020; Cristo-Andrade and Ferreira, 2020). Strategic entrepreneurship is commonly theorized at the intersection of entrepreneurship and strategic management (Bui *et al.*, 2020). Cowling and Lee (2017) have identified the most extensively acknowledged model of strategic entrepreneurship, including four key dimensions: entrepreneurial mindset, entrepreneurial culture, entrepreneurial leadership and strategic management of resources. According to Cardon *et al.* (2012), there are multifaceted connections between entrepreneurship as a research field and the resource-based view as a theoretical approach. The resource-based view postulates that resources possessed by a firm are the primary determinants of its competitive advantage (Barney, 2001). According to this view, it is significantly easier to exploit new opportunities using resources and competencies that are already available than to acquire new skills, traits or functions for each individual opportunity. These resources are the focus of the resource-based view model, with its supporters arguing that they should be prioritized within organizational strategy development (Back and Bausch, 2019). Therefore, a resource-based view is pivotal in defining strategic entrepreneurship (Roundy and Bayer, 2019; Teece, 2017). The instrumental relevance of the resource-based view to strategic entrepreneurship is one of the most influential theoretical approaches in explaining contextual influences on the socioeconomic behavior of firms (Montani and Boudrias, 2017).

Accordingly, the resource-based view explains the effects on firm behavior and comprises strategic entrepreneurship decisions (Morgan *et al.*, 2016; Teece, 2010).

This paper begins by conducting a literature review to extract the building blocks of the theoretical framework. It first investigates the separate dimensions of strategic entrepreneurship that may play different roles in firm performance. The research assumes that studying the effects of the distinct dimensions of strategic entrepreneurship is crucial in understanding the manner in which strategic entrepreneurship impacts firm performance.

Tipu and Fantasy (2018) have demonstrated the usefulness of viewing strategic entrepreneurship as a multidimensional construct. They propose that all dimensions of strategic entrepreneurship may be present when a business enters a new market. Besides, a successful new entry does not necessarily require all dimensions of strategic entrepreneurship to be present in equal measure. Some of these dimensions may play a more prominent role during new market entry. Similarly, Urbano *et al.* (2019) argue that the dimensions of strategic entrepreneurship have differential roles in firm performance. However, to understand the nature of the relationship between strategic entrepreneurship and firm performance, and to avoid misleading descriptive and normative theory building, it is necessary to consider the individual relationships between the dimensions of strategic entrepreneurship and firm performance.

Entrepreneurial mindset

Jabeen *et al.* (2017) define the entrepreneurial mindset as a specific state of mind, which orientates human conduct toward entrepreneurial activities and outcomes. Individuals with an entrepreneurial mindset are often drawn to opportunities, innovation and new value creation (Lindberg *et al.*, 2017). De Winnaar and Scholtz (2019) emphasize that the existence of an entrepreneurial mindset is necessary for firm performance. The dimensions of the entrepreneurial mindset are categorized into three topics, namely, entrepreneurial intuition, entrepreneurial alertness and entrepreneurial framework conditions (Gomez and Rangum, 2018).

Intuition is a process that directs access to unconscious knowledge, unconscious cognition, inner sensing, insight into unconscious pattern-recognition and the ability to understand something instinctively without the need for conscious reasoning (Salas *et al.*, 2010). Therefore, intuition plays a key role in decision-making processes directly (Thompson *et al.*, 2011). According to Jabeen *et al.* (2017), entrepreneurial intuition is necessary for entrepreneurship and it is based on the experiences, conceptualization and metaphors. However, entrepreneurial intuition relies on the creative cognitions required to identify new business opportunities (Maine *et al.*, 2015).

Entrepreneurial alertness is defined as a cognitive capability that positively influences opportunity recognition (Sharma, 2019). According to Urban (2020), entrepreneurial alertness is considered crucial for business growth, which can have an impact on entrepreneurs' mindset in exploiting opportunities (Brockman, 2014; Valliere, 2013; Tang *et al.*, 2012). Finally, entrepreneurial framework conditions assume that sensible and insensible sources help to identify entrepreneurial opportunities and lead to the development of competitive advantages (Orobia *et al.*, 2020). As pointed out by Tang and Murphy (2012), entrepreneurial framework conditions include activities such as target and timing strategy for firm performance. The state of entrepreneurial framework conditions directly influences the existence of entrepreneurial opportunities, entrepreneurial capacity and preferences, which, in turn, determines business growth (Drohomeretski and Gouvea Da Costa, 2015). In this light, our first hypothesis shall be formulated as follows:

H1. Entrepreneurial mindset has a direct and positive effect on firm performance.

Entrepreneurial culture

Entrepreneurial culture is a system of values, beliefs and norms shared by members of an organization, including valuing creativity and tolerance of creative people, believing that innovating and seizing market opportunities are appropriate behaviors in tackling the problems of survival and prosperity (Kim, 2018). According to Cowling and Lee (2017), institutional theory helps to apply the concept of entrepreneurial culture to the realm of economics. Institutional theory focuses on the development, persistence and effects of the behavioral aspects of institutions on economic growth (Werthes *et al.*, 2018). Although many research studies emphasize formal institutions (e.g. Coccia, 2016), informal institutions, such as norms and values, strongly affect business actions, too (Acs *et al.*, 2016). Afshar Jahanshahi *et al.* (2019) have indicated that those businesses with a more significant endowment of entrepreneurial culture exhibit a greater tendency for firm performance. According to Maine *et al.* (2015), firms should consider the entrepreneurial culture and the tendency to create value as one of the crucial dimensions of firm performance. In an entrepreneurial culture, firms focus on longtime economic durability by supporting novel ideas to create value (Mazzei, 2018). Recently, Lindberg *et al.* (2017) have argued that entrepreneurial culture supports business growth. Hence, according to the above discussion, the following hypothesis can be proposed:

H2. Entrepreneurial culture has a direct and positive effect on firm performance.

Entrepreneurial leadership

Entrepreneurial leadership is a new and modern type of leadership that combines entrepreneurship spirit and leadership skills (Felix *et al.*, 2019; Harrison *et al.*, 2018). It involves organizing and motivating a group of people to achieve a common objective through innovation, risk optimization, the exploitation of opportunities and the management of dynamic organizational environment (Coccia and Watts, 2020). Harrison *et al.* (2018) define entrepreneurial leadership as affecting and directing the performance of employees toward the achievement of organizational objectives, which, in turn, leads to business growth. According to Boukamcha (2019), entrepreneurial leadership in firm performance should embrace leadership potential combined with entrepreneurial skills that encourage innovation.

Back and Bausch (2019) have stressed that the relationship between entrepreneurial leadership and product innovation should not mark the end of an intellectual quest. Instead, this enabler is significantly contingent upon corporate leaders. Similarly, De Winnaar and Scholtz (2019) have proposed entrepreneurial leadership as a leading process to identify entrepreneurial opportunities. Such a mindset induces entrepreneurs and employees to act entrepreneurially, supporting firm performance (Harrison *et al.*, 2018). This reasoning guides us to form our third research hypothesis:

H3. Entrepreneurial leadership has a direct and positive effect on firm performance.

Strategic management of resources

Barney (2001) defines resources as all assets, features and controllable knowledge of the business. According to the resource-based view, competitive advantage depends on utilizing resources that are valuable and rare, and that cannot be copied and replaced (Barreto and Patient, 2013). Consistent with the tenets of the resource-based view, Andersén (2011) has suggested that firms should strategically organize resources to foster the opportunity and advantage-seeking behaviors that lead to firm performance. Tajeddini (2016) has pointed out that opportunity-seeking activities compete for limited capabilities and resources to explore new markets. The recognition of new opportunities relies on such capabilities as information,

entrepreneurial experiences and market recognition (Escribá-Carda *et al.*, 2020). These capabilities should also be developed or acquired to balance the exploration and exploitation of opportunities (Barreto and Patient, 2013).

A resource-based view emerges from interpreting the development of business capabilities and addressing the future of changing environments (Barney, 2001). Teece (2007) has represented the micro-foundations of the resource-based view, including sensing (the identification and assessment of an opportunity), seizing (the mobilization of resources to address an opportunity and to capture value) and transforming (the reconfiguration of a firm's intangible and tangible resources). Based on the above discussion, we propose the following hypothesis:

H4. Strategic management of resources has a direct and positive effect on firm performance.

The relationship between strategic entrepreneurship and firm performance

Klein *et al.* (2013) has suggested that once strategic entrepreneurship is present, firms employ strategic entrepreneurial actions to achieve competitive advantage. In a similar vein, Cristo-Andrade and Ferreira (2020) have demonstrated that strategic entrepreneurship has its processes and mechanisms which must afford enough not only to encourage novel ideas but also to allow firms to achieve entrepreneurial outcomes, competitive advantage and subsequent firm performance. Maximum firm performance is obtained when strategic entrepreneurship leads to synthesizing opportunity-seeking behaviors and advantage-seeking activities (Zhao *et al.*, 2020). According to Werthes *et al.* (2018), wealth is created when businesses combine effective opportunity recognition behaviors with advantage-seeking behaviors. Kyrgidou and Hughes (2010) have indicated that continuum innovation plays a leading role in the process of strategic entrepreneurship, which serves as a balancing factor between discovery and the exploitation of opportunities. As evident from the literature, and as also pointed out by Niskanen *et al.* (2017), recent research into entrepreneurship has often merged the dimensions of strategic entrepreneurship, taking into consideration a single construct, and analyzing their combined effect on firm performance. Hence, we hypothesize the following:

H5. Strategic entrepreneurship has a direct and positive effect on firm performance.

The relationship between corporate entrepreneurship and strategic entrepreneurship

Paek and Lee (2018) have defined corporate entrepreneurship as a process whereby firms identify, recognize and discover potential opportunities to create and develop new products, services, ventures and markets. Luke *et al.* (2011) believe that corporate entrepreneurship means realizing market needs for presenting higher value through a resource-based view. In another study, Maine *et al.* (2015) assume that corporate entrepreneurship is at the heart of strategic entrepreneurship and indicate that strategic entrepreneurship should be long-lasting. Elsewhere, Tajeddini (2016) shows the positive impact of product innovation on entrepreneurial strategies in Japanese SMEs.

According to Drohomerecki and Gouvea Da Costa (2015), corporate entrepreneurship includes two theories: the discovery and the creation of opportunity, which are different from the theories already existing. The theory of opportunity recognition assumes that the environment is the opportunity (Davidsson, 2015). On the other hand, based on the theory of opportunity creation, the human mind is an opportunity resource because the environment has the nature of the situation (Olander *et al.*, 2016; Gast *et al.*, 2015). Therefore, they are the result of an individual's mental analysis in the context of social interactions and technology

for strategic entrepreneurship. In other words, opportunities are created in the creative thinking of entrepreneurs and firms. Hence, we propose the following hypothesis:

H6. Corporate entrepreneurship has a direct and positive effect on strategic entrepreneurship.

The mediating role of strategic entrepreneurship

Paek and Lee (2018) have argued that strategic entrepreneurship is possible through the corporate entrepreneurship process. Strategic entrepreneurship can be accomplished at different levels, such as projects and functions (Morgan *et al.*, 2016). Its common goal is to improve competitive situation and opportunity recognition (Santos *et al.*, 2019; Sharma, 2019). According to Boudreaux (2020), strategic entrepreneurship forms the basis of firm performance. Antoncic and Hisrich (2004) have discussed that corporate entrepreneurship tends to have an indirect, substantial impact on firm performance, which is mediated by strategic entrepreneurship. In other words, strategic entrepreneurship functions as a mediator, which serves as a conduit, in the relationship between corporate entrepreneurship and firm performance (Salas *et al.*, 2010). While corporate entrepreneurship provides essential elements for achieving benefits in the relationship, strategic entrepreneurship converts corporate entrepreneurship into firm performance throughout firms to gain competitive advantage. In this light, we hypothesize the following:

H7. Strategic entrepreneurship mediates the relationship between corporate entrepreneurship and firm performance.

Methodology

Procedure and sample

This study follows a quantitative methodological approach to test the proposed model using a questionnaire to collect data. The population in this study includes financial technology companies in Iran. This research examines the manner in which the companies can leverage strategic entrepreneurship in the exploration and exploitation of opportunities, which affects firm performance. According to Iran's vice-president for science and technology, there are 210 Iranian financial technology companies in 2020. Therefore, to obtain the considerate reliable sampling of 136 completed questionnaires, recommended by Krejcie and Morgan (1970), the researchers decided to inflate 136 by 50%, that is by 68. This is to compensate for the possible unavailability of respondents and to reach acceptable and reliable results. Adding this number to the initial sample size of Krejcie and Morgan's table gives the final sample size of 204. Therefore, out of the 210 financial technology companies, a target of 204 respondents to the survey was calculated using a probability sampling method. Finally, 103 completed questionnaires were received, which represents a response rate of 50%. Iranian financial technology companies participating in the survey operate in different industries, including banking 43%, insurance 25% and brokerage 32%. The validity and reliability of the questionnaire were also tested. Confirmatory factor analysis was used to investigate the validity of each construct. Besides, Cronbach's alpha coefficient was applied to explore the reliability of the instrument. A *t* statistic on mean differences between the early and late groups of respondents was utilized in terms of the key variables in the model to test non-response bias. Furthermore, non-significant results were observed, which supported the absence of bias in this study. Finally, this paper proceeds to statistical analysis using the structural equation modeling technique.

Measurement

This study uses previously validated scales from entrepreneurship literature to operationalize the key constructs. Furthermore, the aim of the study was clarified for the respondents. For all the research variables, a 7-point Likert scale was used in which the respondents were asked to give the response that was anchored from 1 (strongly disagree) to 7 (strongly agree). Strategic entrepreneurship was evaluated with 14 items adopted from [Kropp et al. \(2008\)](#). An example item is “Our firm usually focuses on the specific resources that can be used to protect a competitive advantage.” Corporate entrepreneurship was measured with 18 items from [Antoncic and Hisrich \(2004\)](#) to assess the entrepreneurial behavior of firms. An example item is “Our firm has a special sensitivity towards innovation.” Finally, firm performance was assessed using five items borrowed from [Mitchelmore and Rowley \(2013\)](#). Respondents’ opinions were asked on items that showed the degree to which their firms create value by rating statements such as “Our firm has a guiding mission, and it sets short-term specific objectives that it intends to achieve.”

Results

The statistical method employed in this study is the partial least squares done in two steps. In the first step, the measurement model was examined through validation, reliability analysis and confirmatory factor analysis. In the second step, the structural model was tested by estimating the path coefficients between variables and determining the measurement-model fit indices ([MacCallum and Browne, 1993](#)). The data were analyzed through structural equation modeling by means of the SmartPLS 3 software. Three criteria, namely, reliability, convergent validity and divergent validity, were used to examine the fit degrees. As presented in [Table 1](#), the results reveal that the Cronbach’s alpha and composite reliability for all variables are more than 0.70. Furthermore, the average variance extracted (AVE) is more than 0.50 for all variables, which indicates that the value of convergence validity is relatively high.

In the current research, confirmatory factor analysis was conducted to test the validity of constructs. The results indicate that all items were loaded significantly on their predictable variables ($p < 0.001$). The next phase was to assess discriminant validity using the Fornell-Larcker method ([Fornell and Larcker, 1981](#)). This method compares the square root of the AVE with the correlation of latent constructs. Therefore, the square root of each AVE should have more value than the correlations with other latent constructs. Overall, in the current research, discriminant validity can be accepted for the measurement model. [Table 2](#) depicts Fornell and Larcker’s matrix.

Table 1.
Results of validity and reliability analysis and confirmatory analysis of the component

| Flag | Structures | Cronbach’s alpha | Composite reliability | AVE |
|------|-----------------------------------|------------------|-----------------------|------|
| EC | Entrepreneurship culture | 0.77 | 0.75 | 0.53 |
| EL | Entrepreneurial leadership | 0.75 | 0.96 | 0.71 |
| EM | Entrepreneurial mindset | 0.73 | 0.87 | 0.64 |
| SR | Strategic management of resources | 0.79 | 0.87 | 0.69 |
| SE | Strategic entrepreneurship | 0.88 | 0.88 | 0.77 |
| IN | Innovation | 0.84 | 0.86 | 0.68 |
| RT | Risk-taking | 0.83 | 0.90 | 0.83 |
| PR | Proactiveness | 0.87 | 0.97 | 0.59 |
| AG | Aggressiveness | 0.83 | 0.85 | 0.71 |
| AU | Autonomy | 0.98 | 0.92 | 0.68 |
| CE | Corporate entrepreneurship | 0.94 | 0.90 | 0.66 |
| FP | Firm performance | 0.94 | 0.94 | 0.66 |

Table 2.
Fornell and Larcker matrix

| Flag | EC | EL | ET | SR | SE | CE | IN | RT | PR | AG | AU | FP |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| EC | 0.70 | | | | | | | | | | | |
| EL | 0.39 | 0.88 | | | | | | | | | | |
| ET | 0.83 | 0.70 | 0.74 | | | | | | | | | |
| SR | 0.65 | 0.75 | 0.74 | 0.88 | | | | | | | | |
| SE | 0.44 | 0.80 | 0.68 | 0.73 | 0.88 | | | | | | | |
| CE | 0.33 | 0.54 | 0.50 | 0.55 | 0.77 | 0.73 | | | | | | |
| IN | 0.59 | 0.58 | 0.63 | 0.60 | 0.34 | 0.72 | 0.75 | | | | | |
| RT | 0.71 | 0.70 | 0.75 | 0.76 | 0.55 | 0.74 | 0.72 | 0.71 | | | | |
| PR | 0.34 | 0.72 | 0.68 | 0.78 | 0.91 | 0.54 | 0.68 | 0.80 | 0.62 | | | |
| AG | 0.27 | 0.49 | 0.47 | 0.45 | 0.46 | 0.24 | 0.33 | 0.68 | 0.66 | 0.69 | | |
| AU | 0.40 | 0.50 | 0.57 | 0.68 | 0.57 | 0.64 | 0.67 | 0.67 | 0.28 | 0.76 | 0.78 | |
| FP | 0.29 | 0.77 | 0.60 | 0.63 | 0.70 | 0.46 | 0.52 | 0.83 | 0.44 | 0.44 | 0.70 | 0.79 |

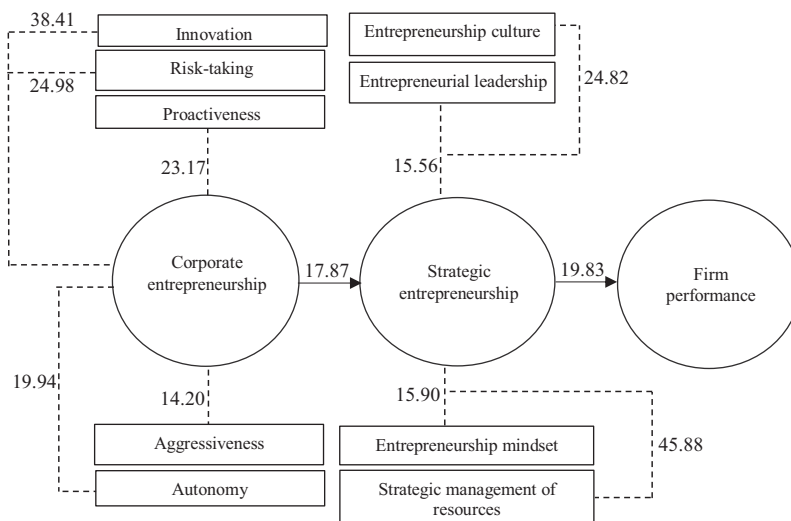


Figure 1.
The final model of *t*-values

This study used structural equation modeling to confirm the research hypotheses. Several indices were used to examine the structural model fit. The first index is the *t* statistic. The *t* statistic is the ratio of the departure of the estimated value of a parameter from its hypothesized value to its standard error (Reinartz *et al.*, 2002). In the current research, all the *t* statistics are more than 1.96; thus, we can reject the null hypothesis in favor of the alternative. The final model presenting *t* values for the proposed hypotheses is depicted in Figure 1.

Tenenhaus *et al.* (2005) have proposed the goodness of fit (GOF) as an index for validating the partial least squares model globally. Partial least squares can be interpreted as the geometric mean of two types of R^2 values' averages: the average communality, that is, the average proportion of variance explained when regressing the reflective indicators on their latent variables, and the average R^2 of the endogenous latent variables. Specifically, the GOF is defined in Formula (1).

Table 3.
Value of fitness
indexes for the
variables of the
research model

| Flag | Structures | Communality | R ² | Redundancy |
|------|-----------------------------------|-------------|----------------|------------|
| EC | Entrepreneurship culture | 0.63 | 0.88 | 0.56 |
| EL | Entrepreneurial leadership | 0.70 | 0.77 | 0.50 |
| ET | Entrepreneurial mindset | 0.59 | 0.67 | 0.48 |
| SR | Strategic management of resources | 0.58 | 0.75 | 0.52 |
| SE | Strategic entrepreneurship | 0.37 | – | – |
| IN | Innovation | 0.46 | 0.57 | 0.36 |
| RT | Risk-taking | 0.84 | 0.58 | 0.39 |
| PR | Proactiveness | 0.57 | 0.88 | 0.41 |
| RM | Aggressiveness | 0.59 | 0.56 | 0.42 |
| AU | Autonomy | 0.66 | 0.60 | 0.49 |
| CE | Corporate entrepreneurship | 0.77 | 0.45 | 0.51 |
| FP | Firm performance | 0.76 | – | – |

$$GoF = \sqrt{Avg(\text{communalities}) * Avg(R^2)} = \sqrt{0.60 * 0.91} = 0.82 \quad (1)$$

Formula (1). Goodness of fit

According to **Vandenberg and Lance (2000)**, the criterion of the GOF for small, medium and large values are 0.01, 0.25 and 0.36, respectively. The values of these indicators are presented in **Table 3**. In this research, the results produced the GOF score of 0.82, proving that the model performed well.

The results depicted in **Table 3** reveal that all the GOF indices of structural equation modeling satisfy the cut-off range specified and present the best fit to the data analyzed.

Testing of hypotheses

In the structural equation modeling, R² shows how independent variables affect the dependent variable, with the three values of 0.30, 0.50 and 0.70 as the criterion value for weak, moderate and strong values (**MacCallum and Browne, 1993**). Considering that the interpretive

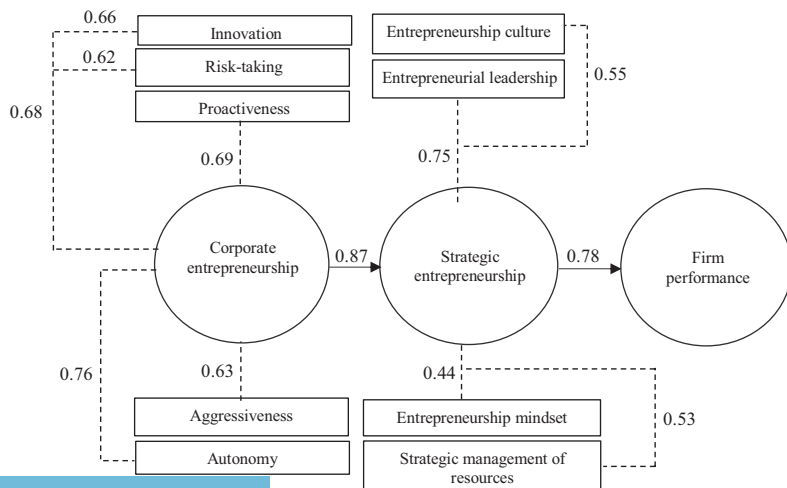


Figure 2.
The final model with
standardized path
coefficients

pattern of structural equation modeling and the amount of the t statistic of all paths is more than 1.96, then the corresponding paths are significant at the 95% level. Consequently, all the proposed hypotheses of the current research are supported. With regard to the values in **Figures 1 and 2** for path coefficients between entrepreneurial mindset and firm performance: ($R^2 = 0.44, p < 0.001$) and ($t = 15.90 > 1.96$); therefore, **hypothesis 1** is accepted. The path coefficient between entrepreneurial culture and firm performance: ($R^2 = 0.56, p < 0.001$) and ($t = 24.82 > 1.96$); hence, **hypothesis 2** is accepted. Likewise, the path coefficient between entrepreneurial leadership and firm performance: ($R^2 = 0.75, p < 0.001$) and ($t = 15.56 > 1.96$); thus, **hypothesis 3** is supported. The path coefficient between the strategic management of resources and firm performance: ($R^2 = 0.53, p < 0.001$) and ($t = 45.88 > 1.96$); therefore, **hypothesis 4** is supported. The path coefficient between strategic entrepreneurship and firm performance: ($R^2 = 0.78, p < 0.001$) and ($t = 19.83 > 1.96$); thus, **hypothesis 5** is accepted. Therefore, strategic entrepreneurship has a positive effect on firm performance. Similarly, the relationship between corporate entrepreneurship and strategic entrepreneurship is confirmed: ($R^2 = 0.87, p < 0.001$) and ($t = 17.87 > 1.96$); so, **hypothesis 6** is accepted. The final model presenting path coefficients for the proposed hypotheses is presented in **Figure 2**.

Table 4 represents the mediating effect of strategic entrepreneurship in the relationship between corporate entrepreneurship and firm performance. Mediation analysis shows that corporate entrepreneurship directly affects firm performance independent of strategic entrepreneurship ($\beta c' = -1.76, p < 0.005$; c' path). However, corporate entrepreneurship also indirectly affects firm performance through its effect on strategic entrepreneurship. Corporate entrepreneurship is negatively associated with strategic entrepreneurship ($\beta a = -0.54, p < 0.001$; a path), and strategic entrepreneurship is positively associated with firm performance ($\beta b = 1.54, p < 0.001$; b path). Both corporate entrepreneurship and strategic entrepreneurship remained significant predictors of firm performance in Model 2 ($\beta c' = -2.65, p < 0.001$; c' path; $\beta b = 0.99, p < .001$; b path, respectively). **Figure 3** illustrates the mediating analysis of strategic entrepreneurship in the relationship between corporate entrepreneurship and firm performance. Besides, the mediating effect of strategic entrepreneurship in the relationship between corporate entrepreneurship and firm performance was further tested using the Sobel mediation test with a bootstrapping procedure (**Figure 3** and **Table 4**). The Sobel mediation test shows the significant indirect effect of strategic entrepreneurship on the impact of corporate entrepreneurship on firm performance ($Z = -4.02, p < 0.001$). The results of the bootstrap procedure corroborated those of the Sobel test: the 95% bias-corrected confidence interval (95% CI -1.23 to -0.41) was non-zero, indicating that corporate entrepreneurship mediates the relationship between corporate entrepreneurship and firm performance (Model 1) and accounted for 42.1% of the total effect on firm performance. Therefore, **hypothesis 7** is accepted.

Discussion

In this study, the main concern was the challenges of implementing strategic entrepreneurship within Iranian financial technology companies. Therefore, this paper employs the resource-based view to understand how financial technology companies could utilize their entrepreneurial strategies, resources and capabilities to achieve commercial values and a sustained performance. This is relevant in the context of a developing country such as Iran in which firms operate in a very challenging economic and competitive environment. Under these circumstances, the strategic entrepreneurship of firms requires managerial actions to bundle resources to form capabilities for achieving a higher level of performance strategically.

The current research develops a framework according to which corporate entrepreneurship has a positive and direct influence on strategic entrepreneurship, which

Table 4.
The association
between corporate
entrepreneurship and
firm performance,
mediated by strategic
entrepreneurship

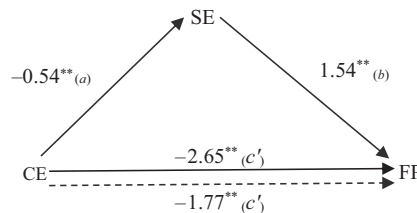
| Path | Model 1 | | Model 2 | | Model 3 | |
|--|-----------------|----------------|-----------------|----------------|-----------------|----------------|
| | β (SE) | 95% CI | β (SE) | 95% CI | β (SE) | 95% CI |
| CE | -0.54 (0.15) ** | -0.64 to -0.42 | -0.38 (0.06) ** | -0.48 to -0.28 | -0.24 (0.05) ** | -0.32 to -0.15 |
| SE | 1.54 (0.49) ** | 0.94 to 1.84 | 0.99 (0.30) ** | 0.42 to 1.57 | 1.12 (0.36) * | 0.46 to 1.75 |
| Total effect, <i>c</i> | -2.07 (0.58) ** | -3.77 to -1.27 | -2.23 (0.62) ** | -3.42 to -1.03 | -2.33 (0.61) ** | -3.61 to -1.02 |
| Direct effect, <i>c'</i> | -1.81 (0.56) * | -3.73 to -0.79 | -1.92 (0.63) * | -3.25 to -0.73 | -2.02 (0.62) * | -3.15 to -0.83 |
| Indirect effect, ab | -0.75 (0.29) | -1.23 to -0.41 | -0.49 (0.23) | -0.57 to -0.13 | -0.27 (0.12) | -0.53 to -0.08 |
| The ratio of indirect to total effect mediated (%) | 42.1% | | 16.3 | | 13.1 | |
| Sobel test | -4.02 ** | | -3.04 ** | | -2.75 ** | |

Note(s): CI—confidence interval; SE—standard error. * $p < 0.005$, ** $p < 0.001$

affects firm performance through the mediating role of strategic entrepreneurship. This paper adopts a resource-based view as a tool for concretizing a theoretical framework of strategic entrepreneurship. Based on the results, this research validates all the direct relationships of the model. Specifically, **H1**, **H2**, **H3** and **H4** refer to promote firm performance and were supported. This finding suggests that the dimensions of strategic entrepreneurship (i.e. entrepreneurial mindset, entrepreneurial culture, entrepreneurial leadership and strategic management of resources) contribute to the recognition of firm performance. This conclusion is not surprising, since the dimensions of strategic entrepreneurship are intended to mold its behavior. However, the value-added contribution of this paper lies in providing a sharper picture of how exactly the four dimensions of strategic entrepreneurship influence firm performance. This type of fine-grained information is of practical use to managers and helps researchers to better understand the subtleties of strategic entrepreneurship.

The findings of the current study also reveal that in Iranian financial technology companies, adopting strong strategic entrepreneurship allows firms to create, discover and exploit new opportunities and to capture value from doing so. The impact of strategic entrepreneurship on firm performance is consistent with the results of a number of studies (e.g. Boudreaux, 2020). The results of the present research also depict a strong relationship between corporate entrepreneurship and strategic entrepreneurship. This paper emphasizes the need for a more robust implementation of corporate entrepreneurship in Iranian financial technology companies. It is evident from the findings that innovativeness, risk-taking, proactiveness, competitive aggressiveness and autonomy are important correlates of strategic entrepreneurship. What is particularly instructive about these results is that the pursuit of strategic entrepreneurship requires an increase in the intensity of some entrepreneurial behaviors, such as opportunity recognition, which should be a principal concern of entrepreneurial-minded firms. The results in this area imply that entrepreneurial-minded firms should institutionalize corporate entrepreneurship in their planning systems.

The findings are consistent with previous studies (e.g. Gast et al., 2015), which argued for the proposition that corporate entrepreneurship is an antecedent of strategic entrepreneurship. This research also confirms the mediating role of strategic entrepreneurship in the relationship between corporate entrepreneurship and firm performance. Specifically, the findings lend credence to the idea that strategic entrepreneurship is considered a transformer for converting corporate entrepreneurship into firm performance. So far, no study has been found that investigates the mediating role of strategic entrepreneurship in the relationship between corporate entrepreneurship and firm performance. This finding is in line with the central tenet of the resource-based view. The explaining power of the resource-based view has been emphasized, especially in the financial technology companies in Iran. This study finds support that corporate entrepreneurship can be transformed into firm performance through strategic entrepreneurship in Iranian financial technology firms. The results support the general notion that strategic entrepreneurship is



Note(s): ** indicates statistical significance at $p < 0.001$ for all the paths

Figure 3. Mediation analysis. Path coefficients of corporate entrepreneurship on firm performance through strategic entrepreneurship

essential to the entrepreneurial process. The findings are also consistent with Kantur's (2016) observation that if corporate entrepreneurship is to flourish in an organization, strategic entrepreneurship needs to identify and pursue promising opportunities.

Conclusions and implications

The current research contributes to a better understanding of the relationship between strategic entrepreneurship and wealth creation by developing and testing a normative model, which clarifies the nature of the influences of strategic entrepreneurship, its antecedent and its outcomes. The results of the study are relevant to the resource-based view as they support the theory that corporate entrepreneurship can improve firm performance by leveraging strategic entrepreneurship. Corporate entrepreneurship may be a specific resource to identify venture opportunities. Also, a theoretical framework for strategic entrepreneurship is established by adopting the resource-based view, which can provide an appropriate logic for conceptualizing strategic entrepreneurship to bridge the complicated structure of corporate entrepreneurship and strategic entrepreneurship, which, in turn, affects firm performance. Iranian financial technology companies that can identify strategic entrepreneurship but fail to exploit it to develop their performance will not create value for their customers and wealth for their owners. Therefore, they must adopt strategic entrepreneurship to engage in both opportunity-seeking and advantage-seeking behaviors. The theoretical framework considered in this research can also extract corporate entrepreneurship in Iranian financial technology companies. Hence, these firms should follow new opportunities by employing corporate entrepreneurship. Indeed, Iranian financial technology companies should consider the entrepreneurial mindset, culture and leadership, and manage their resources strategically to implement firm performance.

Our study also reveals some interesting issues for managerial practice, starting with a redefinition of business programs supporting corporate entrepreneurship and enhancing firm performance through simultaneous opportunity-seeking and advantage-seeking behaviors of strategic entrepreneurship. These programs may be more effective if they target the development of dynamic capabilities rather than solely access to resources. Our findings also provide direction for managers to facilitate the innovative behaviors of employees by providing a creative environment in which they are allowed to obtain information so that they can conveniently and quickly evaluate and compare alternatives.

Future lines of research

This study has the potential value for presenting a foundation for future research. First, while each of the organizational theories discussed in this study could be adopted as a foundation for a single study investigating strategic entrepreneurship, many theoretical tenets might be utilized in conjunction to gain a better understanding of strategic entrepreneurship and its challenges. For example, a study bringing together strategic choice and agency theories might offer clear insights. The strategic choice theory focuses on the strategic decisions made by entrepreneurs to fit strategic entrepreneurship with the competitive environment. On the other hand, agency-theoretic principles applied to strategic entrepreneurship help to identify structures that encourage the interests and actions of entrepreneurs toward both the exploration and exploitation of opportunities. Second, the theoretical framework developed in the current research is recommended for future investigations to determine its applicability to other industries. Moreover, accepting the authenticity of resource inputs located at different levels, it is necessary to revisit the implications of how these varied inputs interact with the strategic entrepreneurship orchestration processes. Applying a diverse set of theories following these inputs can help build additional clarity around future studies.

Limitations

This paper has several limitations. First, a cross-sectional study design was used to obtain the data. Since cross-sectional studies are carried out once and represent a snapshot of one point in time, they do not establish crucial relationships (Reinartz *et al.*, 2002). A longitudinal study can track changes over time and give a clearer picture of the reasons for success or failure. Furthermore, this study was concentrated in a single industry, that is, Iranian financial technology companies; however, the study of a single industry may also limit the generalizability of the results to other industries.

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