



The University of Tehran Press

Interdisciplinary Journal of Management Studies
(IJMS)

Home Page: <https://ijms.ut.ac.ir>

Online ISSN: 2981-0795

A Conceptual Model for Antecedents of Dynamic Capability Development in New Ventures (Case Study: IT Business)

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ARTICLE INFO

Article type:

Research Article

Article History:

Received 04 October 2022

Revised 06 April 2023

Accepted 28 May 2023

Published Online 09 March 2024

Keywords:

Dynamic Capabilities,
Dynamic Capability Development,
IT Businesses,
New Ventures.

ABSTRACT

Resource limitation has always been an issue discussed in different fields of science. By using dynamic capabilities, companies can respond to environmental fluctuations despite their limited resources. This study aims to understand the development of dynamic capabilities in new ventures. The methodology is a qualitative multiple-case study analysis. It draws on in-depth interviews with 15 new ventures in the field of IT selected using purposive sampling. The results identified four critical factors for the development of dynamic capabilities in new ventures, which are the antecedents of dynamic capability development: characteristics of the management team, resources, and capabilities of the firm, strategic orientations, and the environment. These improve the performance of the firm through radicalness. The results provide valuable insights for managers and researchers on creating and developing dynamic capabilities in new ventures.

Cite this article: Abdoli Mohamadabadi, T.; Ahmadpour Daryani, M; Karimi, A. & Amiri Sardari, Z. (2024). A Conceptual Model for Antecedents of Dynamic Capability Development in New Ventures (Case Study: IT Business). *Interdisciplinary Journal of Management Studies (IJMS)*, 17 (2), 625-638. DOI: <http://doi.org/10.22059/ijms.2023.348938.675388>



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Publisher: University of Tehran Press.

DOI: <http://doi.org/10.22059/ijms.2023.348938.675388>

Introduction

Companies in changing environments must anticipate and react to changes (Eriksson, 2014). This ability has been referred to as dynamic capability (DC) (Teece et al., 1997). The ultimate aim of the DC approach is to explain the competitive advantage of firms over time (Teece & Pisano, 1994).

Firms' responses to volatile and unstable market conditions using their limited resources can be explained by the resource-based view and dynamic capabilities (DCs) (Teece & Pisano, 1994; Weaven et al., 2021). In fact, the dynamic capability approach is considered an extension of the resource-based view (RBV) (Ambrosini & Bowman, 2009). This approach focuses on the inner perspective of the organization (modifying the layout of resources, generally defined) and also the external perspective (orientated towards adapting to and following a dynamically changing environment) (Cyfert et al., 2021). Seize dynamic capabilities have become well-established as a new imperative for organizing processes (Cirjevskis, 2021).

The origins of the concept lie in strategic management, but it has been applied in areas as diverse as marketing, entrepreneurship (Barreto, 2010), risk management (O'Connor et al., 2008), innovation management (Lawson & Samson, 2001) and logistics (Glenn et al., 2005; Eriksson, 2014).

The DC view helps firms understand how to develop an organization's resource base over time and focuses on how a firm optimizes and aligns with environmental changes to gain a competitive advantage (VU, 2020). Hence, developing DCs is one of the key factors in achieving and maintaining competitive advantages (Beigi et al., 2022; Hosseinzadeh et al., 2021) to promote a firm's growth (D'Annunzio et al., 2015; Eisenhardt & Martin, 2000; Teece, 2012; Hosinzadeh et al., 2021; Tran et al., 2019).

Developing and applying dynamic capabilities to build a sustainable competitive advantage can provide the necessary ground for considerable business efficiency improvement and help managers and policymakers comprehend how to improve business efficiency in dynamic environments (Beigi et al., 2022).

Firms facing changing markets and technologies need to develop new capabilities to overcome failures (Leonard, 1995). Winter (2003) argues that the pace of change in an industry is a deciding factor in developing dynamic capabilities. Based on the preliminary empirical evidence, DCs are one of the most critical drivers in the course of creating and evolving new ventures (Sapienza et al., 2006), which are the main sources of economic growth and innovation (Wong et al., 2005). However, new ventures with insufficient resources and capabilities are more sensitive to changes in the market, and therefore, they should develop DCs to respond to changes (Kwon et al., 2018).

This article makes two contributions to the literature. First, we review the extant literature, discuss significant inconsistencies and ambiguities, and suggest remedies that can direct future studies. Second, we improve the understanding of dynamic capabilities in new ventures.

The dynamic capabilities literature has given scant attention to younger firms as they create, discover, and exploit opportunities. However, it has mainly focused on DCs in large firms (Hallager, 2010) and the drivers of dynamic capabilities (Erickson, 2014; Correa, 2021; Ambrosini & Bowman, 2009) in firms. Hence, previous studies have not discussed the development of dynamic capabilities in new ventures.

Therefore, more research is required on the capabilities of young firms (Sapienza et al., 2006) and emerging firms (Newbert, 2005) and how to develop DCs in new ventures. Although DCs have become one of the main fields of study in strategic management, scholars still hope to discover more about the nature of DCs, their drivers or antecedents, their consequences, and their organizational and managerial processes and procedures (Albort-Morant et al., 2018) in new ventures. Therefore, it is necessary to conduct empirical research to identify the systematic factors that influence capabilities development (Pisano, 2015) in new ventures, specifically IT businesses in developing countries. Consequently, this study aims to answer the following research question: How is it possible to develop DCs in new ventures?

The paper is organized as follows. First, we present a brief review of the relevant literature and the interviews' results to determine the key categories related to the main topic of the research. Then, we discuss the categories related to the antecedents of DC development using the coding method.

Literature Review

Dynamic capabilities. Dynamic capabilities are a significant opportunity for assuring organizational adaptation and sustainable growth in obscure and changing environments (Zahra et al., 2022). The DCs theory assumes that companies require specific capabilities to be successful and responsive to the (dynamic) changes in their environment by creating, integrating, and modifying their resource base (Siems et al., 2021). Researchers have focused their investigations on how these performance differences come about (Helfat & Peteraf, 2003), the types of different capabilities used (Subramaniam & Youndt, 2005), and how these capabilities develop over time (Ethiraj et al., 2005). Businesses can achieve competitive advantage and innovation by using resources and assets to develop dynamic capabilities (Hosinzadeh et al., 2021).

Teece et al. (1997) developed the first definition of DCs, using it to refer to the firm's ability to integrate, construct, and reconfigure internal and external competencies and thus respond to address rapidly changing environments. Evidence from studies shows that resources play varying roles in capability development (McKelvie & Davidsson, 2009; Nieves & Haller, 2014; Teece, 2018). Importantly, changes in resource base have more influential roles in the development of dynamic capabilities than the resource stock variables that were measured at an earlier stage of firm development (McKelvie & Davidsson, 2009). On the other hand, there are basic processes and mechanisms in the development of DCs, which include coordination, integration, learning, and reconfiguration of resources (Zahra et al., 2006). DCs can be summarized as three clusters of entrepreneurial activities that take place concurrently throughout the organization: sensing, seizing, and transforming (Teece, 2012a, 2016); these are the micro-foundations of DC development (Teece, 2007). In order to achieve long-run enterprise financial success (Teece, 2014), gain competitive advantages in the market, and create a niche market (Karagouni & Kalesi, 2011), the joint presence of strong DCs in all three areas (i.e., sensing, seizing and transforming), VRIN resources, and a good strategy is necessary (Teece, 2014).

DCs in New Ventures. Prior research suggests that DCs are essential for creating and evolving new ventures (Newbert, 2005), impacting their future success and survival (Sapienza et al., 2006). Dynamic capabilities help new ventures generate valuable and unique capabilities in the market. For instance, sensing and seizing new product opportunities leads to the timely launch of high-quality, unique products in the market. Furthermore, when the changes in the environment are highly discontinuous, dynamic capabilities are required to a substantial degree for the simultaneous development of multiple competencies (Razmdoost et al., 2020). Based on the definition of the Global Entrepreneurship Monitor (Bosma et al., 2020), the new ventures in this study are not more than 42 months old. Higher-order capabilities in young and smaller entrepreneurial firms differ from higher-order capabilities developed in large and established firms for a number of reasons (Danneels, 2011; Winter, 2003). First, new ventures lack prior experience, and these firms are often forced to improvise in order to create or generate solutions (Delmar & Shane, 2003). Second, small entrepreneurial firms do not own the accumulated resources that allow time to plan actions or experiment with different contingencies (Renko et al., 2009). Third, new entrepreneurial firms typically face problems during learning and capability development processes since they have few capabilities, and their ability to develop new capabilities is limited (Nieto & Santamaría, 2010). Descriptions abound regarding how firms get going with very limited resources (Baker & Nelson, 2005), and there are compelling arguments that new firms sometimes succeed because they are not constrained by existing resource endowments (Mosakowski, 2017). This would suggest that their performance, whether or not contingent on DCs, has little to do with their resource endowments. This suggests that resource endowments are critically important for new firms and that the development of DCs is a likely mechanism for their performance effect (McKelvie & Davidsson, 2009). Young small firms may be more likely to benefit from a proactive approach to growth than from competitive aggressiveness, compared to larger, well-established firms (Lumpkin & Dess, 2001), suggesting that they may be more likely to change when encountering environmental uncertainty. In this case, entrepreneurial managers may instead redirect resources and pursue strategic shifts directly (Teece, 2012). Therefore, the skills, resources, and strategies that new ventures need to develop dynamic capabilities should be identified.

Antecedents of DCs. Numerous factors influence the development of DCs, which in turn can lead to the success or failure of the firm (Eriksson, 2014). The related studies have emphasized the role of resources (Macpherson et al., 2015; McKelvie & Davidsson, 2009), the role of managers (Teece, 2012a, 2014), the role of knowledge and learning (Eisenhardt & Martin, 2000; Zahra et al., 2006; Zollo & Winter, 2002) and the role of culture (Inan & Bititci, 2015) in the development of DCs. Also, other research shows that strategic orientation (Li & Zhou, 2010) and network embeddedness (Zheng et al., 2011) are important antecedents of DCs in manufacturing firms.

Despite the rapid growth of the literature on DC during this period, empirical evidence regarding relationships remains unclear (Pezeshkan et al., 2016; Schilke, 2018). There is divergence and ambiguity in the empirical literature about which are the antecedent factors and the consequences of the DC, as well as in the form and sign of detected relations (e.g., Wu, 2010; Bitencourt et al., 2020), especially in new ventures. Therefore, the development of DCs to acquire and reconfigure those resources is critical to new ventures.

In summary, although research has been done in this field, there are few studies in new ventures, and knowing the antecedents of the development of DCs requires more studies.

Method

Research design. We use an in-depth qualitative approach to collect data from multiple case studies. A qualitative study was designed to study how the development of dynamic capabilities in new ventures. Qualitative research is based on deep immersion in multiple kinds of data. That's a fundamental characteristic. We may prefer one data type over others, but the inherent feature of "qualitative research" is multiple data types that help reveal the focal phenomenon (Gehman et al., 2018). A model is obtained through the case study of samples; that is, it identifies constructs, categories, and relationships (Eisenhardt & Graebner, 2007).

A multiple case study research design is especially appropriate for investigations of real-world phenomena that are too complex for surveys or experiments and that require an in-depth understanding to answer the "how" question when there is no need for control of behavioral events (Runfola et al., 2017; Yin, 2018).

Sample. The population of the study is represented by new ventures in the field of information technology services in the growth centers and accelerators of the city of Tehran. The sample includes people who currently manage and personally own or co-own a business younger than 42 months old (Bosma et al., 2020). The sampling approach was purposeful and continued until the theoretical saturation was reached (Eisenhardt & Graebner, 2007); It was ensured that the information obtained was almost replicated (Glaser & Strauss, 1967). This was realized in sample 12, but to be sure and to strengthen the reliability of the research, semi-structured interviews were conducted up to sample 15. Interviews were conducted, lasting approximately 20 to 60 minutes.

Data collection. We used multiple sources of data, including interviews with archival and public documents. These data enabled us to strengthen the reliability of the primary qualitative data via triangulation so that potential biases were minimized (Lincoln & Guba, 1985; Yin, 2003; Glaser & Strauss, 1967). The multiple sources of data also enhanced the internal validity of the research. The founders of the firms were the target of the data collection, as is common in new venture research (McDougall et al., 1994). These individuals generally have the best overall knowledge of the firm (Zahra et al., 2002). In many cases, the founder is genuinely the driving factor and the only possible informant for the firm. To gain access to the target community members, face-to-face interviews were conducted by referring to the Tehran and Sharif Science and technology parks. We recorded and transcribed all interviews.

Data analysis. To strengthen the reliability to an acceptable level, two coders (first author and research assistant) were assigned to code the transcripts (Barratt et al., 2011). Both coders are academics with experience in this area and used qualitative content analysis (Duriau et al., 2007; Mayring, 2010) to analyze the material. The coding process itself consisted of testing, comparison, discussion, and retesting over different stages, which helped reduce discrepancies in the coders' mental schemes (Seuring & Gold, 2012). During this process, the coding guidelines were gradually refined based on the exchange and the aligned interpretations of the respective codes, which further increased internal validity. Atlas.ti-7 software assisted in this process.

Initially, we coded all the developing DC components and significant quotations to identify key units of discussion. In the subsequent analysis, we identified statements regarding respondents' views of the developing DCs process and focused on data fragments that related to various perspectives of 'resources and capabilities,' 'strategic orientations' and 'performance. We then followed a recursive process (Lincoln & Guba, 1985) to produce reflective notes by dividing and subdividing key units of meaning (first-order codes) around each of these issues. We constantly compared interviews and secondary data (Glaser & Strauss, 1967) to ensure consistency and reveal subtle similarities and differences between internal and external perspectives. Each case's First-order codes were combined to create 'second-order categories' (Smith et al., 1999). We then conducted a meta-level analysis using second-order categories' from 15 cases to identify patterns across the cases. Links between categories were made to identify shared aspects to produce second-order themes, which were subsequently color-coded to ensure all first-order codes were considered. Then we used clustering (Lincoln & Guba, 1985) to compare and contrast these second-order themes to identify higher-order aggregated themes. Table 1 presents an example of this process that resulted from these steps.

Findings

The inductive coding strategy explained above produced a series of common themes related to several antecedents of developing DCs that facilitated process development.

Table 1. An example of coding of data (Data obtained through interviews)

Aggregated dimensions	Second-order theme	First-order code	Examples of Quotations
Strategic Orientations	Entrepreneurial Strategic Orientations	Proactivity in introducing goods and services	"We exhibited some of our works in international markets abroad and proved that we write programs with such structures and features faster than the others. We wrote a program for a German company and two months later for another company using a similar model but in a different way." (8)
		Innovation through mental shortcuts	"Our main distinction from the others is the innovation and new technologies in the field of fuel distribution. We tried to combine different technologies, while the others did not." (6)
	Market Strategic Orientations	Customer feedback analysis	"We receive feedback on a monthly basis and revise the plans accordingly." (6)
		Agility	"Startups generally do not have pre-determined processes and are very agile organizations." (7)
	Technology Strategic Orientations	Outsourcing	"One of our problems is transportation and delivery to the customers. We had two options: to sign a contract with a shipping company or to do a part of it ourselves and outsource the other parts. Our previous experience was to use a combination." (7)
		Research and development	"There are opportunities that our members discover themselves, and that's because they focus so much on one issue. We participate in all startup weekends or festivals, or we do research." (2)

The steps to access the first-order codes, then to identify the second-order codes, and form the categories as the central codes were taken to identify the individual aggregated dimensions. Finally, seven aggregated dimensions were identified the characteristics of the management team, Resources and capabilities of the firm, Strategic orientations, DCs' dimensions, Environment, Radicalness, and Performance. Each of the seven main identified dimensions is described as follows:

1. Characteristics of the management team

Using the literature as well as the data obtained from this study, we placed the first-order codes from the category characteristics of the management team under more specific codes. These codes include skill components.

This classification is based on Robert Katz's (1974) classification of managerial skills, which includes technical, human, and conceptual skills. It is also based on Sarasvathy's view of managers' and entrepreneurs' effectuation skills and the role they can play in the firm.

Research data show that to develop DCs in new ventures, management teams need to have specific skills. Organizational skills and hard work are considered human skills, while ambition, up-to-dateness, realistic self-belief, observation skills, idea generation, and having a flair for business are extracted as conceptual skills. Designing, marketing, surveying, product presentation, creativity in presenting the products, speeding up the production process, and professional knowledge are technical skills, and flexibility, experience, reducing production costs, and price control are effectuation skills.

2. Resources and capabilities of the firm

According to the components obtained from the interviews, the resources were classified into human capital, organizational capital, and physical capital based on Barney's (1991) classification. On the other hand, based on a study conducted by McKelvie and Davidsson (2009) on how the firm's resource-oriented conditions and base resources affect the development of DCs, knowledge resources are classified into two categories: founders' human capital and employees' human capital.

Research data show that improving the resources and capabilities of the firm plays an important role in developing DCs in new ventures. The resources and capabilities, including the richness of entrepreneurial culture and network capital, are the components of organizational capital. Learning mechanisms, motivational skills, knowledge of management, and entrepreneurial team formation are the components of founders' human capital.

Allocating equity to team members, human resource evaluation, access to an empowered workforce, team feedback, and talent management are identified as components of employees' human capital. Finally, the use of technical tools, the use of appropriate technical infrastructure, and software updates are identified as the components of physical capital.

3. Strategic Orientations

Strategic orientation was developed by Kohli and Jaworski (1990) with the market, entrepreneurial, and technology components that require firms to act strategically in a competitive environment to gain a competitive advantage. We placed the first-order codes from the category strategic orientations under more specific codes related to entrepreneurial strategic orientation, market strategic orientation, and technology strategic orientation.

Entrepreneurial orientation is a general and sustainable orientation that reflects the firm's thoughts, tendencies, and interests toward entrepreneurship (Covin & Lumpkin, 2011). Entrepreneurial orientation in the literature is defined based on three dimensions: innovation, proactivity, and risk-taking (Covin & Slevin, 1989). For instance, based on the data obtained from the interviews, deconstruction, and proactiveness in introducing goods/services can be placed under the proactive strategic orientation

Market Orientation is divided into ,customer orientation and competitor orientation categories, based on the research by Khin et al. (2012). The concept of customer orientation emphasizes the importance of the customer to firms' performance in many aspects, including new product development. Narver and Slater (1990) define customer orientation as the firm's sufficient understanding of its target customers in order to be able to create superior value for them continuously. Competitor orientation is understanding the short-term strengths and weaknesses and key potential competitors' long-term capabilities and strategies (Khin et al., 2012). For instance, based on the data obtained from the interviews, choosing the right entry time, making guaranteed sales, following the business model, optimizing service delivery, agility, and strategic selection are the dimensions of competitive strategic orientation.

Technology orientation is also selected according to Hakala's (2011) classification, including production and product. Long-term success and customer value are created through new innovations,

technology solutions, production, and goods/services processes. Investment in new technologies to develop products is based on customer needs. For instance, based on the data obtained from the interviews, research, and development, the ability to customize the product and the development of a new product are the components of product strategic orientation.

4. Environment

According to the components obtained from the interviews as well as the existing literature related to the classification of the environment by Miller and Friesen (1983), we analyzed the categories of dynamism, hostility, and heterogeneity and arranged the subcategories.

Research data show that the environment can be important in developing DCs in new ventures. In this study, based on the data obtained from the interviews, system dynamics, and high market growth rate are the factors of the dynamism. Competition intensity, technological infrastructure challenges, existing sanctions, and restrictions in the domestic market are the components of the hostility. Internet-centeredness is a dimension of heterogeneity.

5. DCs' dimensions

Based on the components obtained from the interviews as well as the existing literature related to the dimensions of DCs, Teece (2007) defines these dimensions in micro-foundations, which include sensing, seizing, and reconfiguring/transforming. Sensing the opportunities refers to an organization's ability to scan, filter, monitor, evaluate, create, learn, interpret, understand, and measure opportunities and threats. Seizing opportunities is an organization's ability to address opportunities through new products, processes, or services. Reconfiguring/transforming resources is considered the organization's ability to recombine and reconfigure organizational assets and structures during environmental changes. In this study, based on the data obtained from the interviews, sensing, seizing, and reconfiguring are regarded as the three main components of DCs in new ventures.

6. Radicalness

Research data show that DCs radicalize the products and services of new ventures and improve their performance. The firms radicalize through innovation in their products and services.

7. Performance

Research data show that the development of DCs affects the performance of the firm. In this study, based on the data obtained from the interviews, increasing sales, increasing equity, and increasing returns are the components of financial performance; market dominance and entry into international markets are the components of learning and growth performance; customer acquisition is a component of customer performance; and increasing quality, reducing service time, and increasing efficiency are the components of the firm's internal processes.

Based on the components obtained from interviews as well as performance appraisal studies based on Kaplan and Norton's (1992) theory, the firm's performance is measured based on the four dimensions of finance, learning and growth, customers, and internal processes.

In fact, successful firms do not rely solely on financial indicators to evaluate their performance; they also use three other perspectives of the Balanced Scorecard method: customers, internal processes, and learning and growth. Therefore, according to the findings of this study, the final research model is as below:

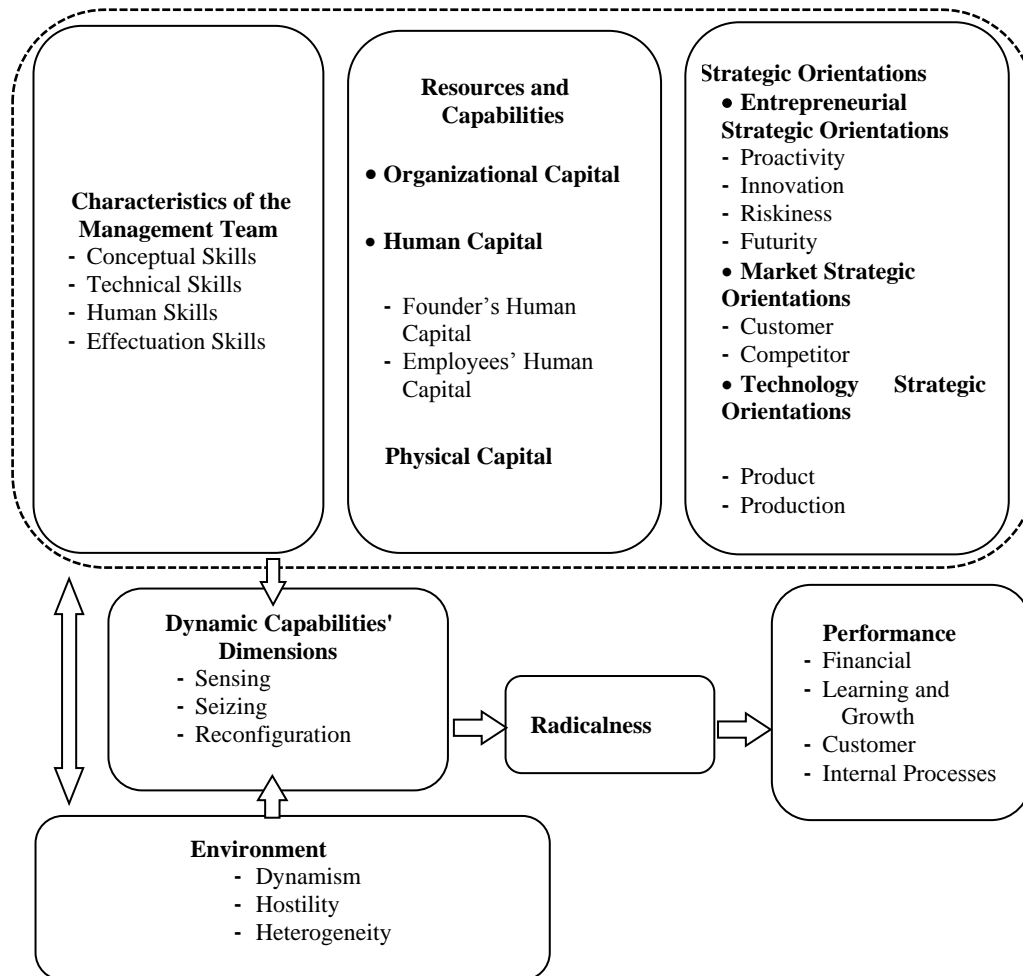


Illustration 1. The Framework of dynamic capabilities' development Research Model

Discussion

This study examined the conceptual model of DCs' development in new ventures in the field of Information Technology. We have emphasized the role that antecedents play in these processes and have posited that the realized value of dynamic capabilities depends on the characteristics of the management team, resources, and capabilities of the firm, strategic orientations, and the environment.

In response to the research question on how emerging IT ventures develop DCs, seven main categories as the antecedents of DCs' development were identified, including characteristics of the management team, resources, and capabilities of the firm, strategic orientations, the environment, DCs' dimensions, radicalness, and performance. Eriksson's (2014) study has emphasized the impact of internal and external antecedents on the development of DCs.

New ventures follow different strategies to pursue opportunities in highly competitive environments. Combining strategic orientations in this field and given the proximity of the concepts extracted from the interviews, it appears that new IT ventures have emphasized several concepts to develop DCs in their business that are not mentioned in the literature. As a result, concepts such as, decision-making based on the environment and customers, market analysis, marketplace, advertising, choosing the right entry time and optimizing service delivery, making guaranteed sales, the ability to customize the product, variety in service delivery, automation, and gradual improvement of the production process can lead to the firm's sustainable competitive advantage and superior performance. Some of the findings support prior research of the work of Tajeddini (2010), who found that customer orientation, entrepreneurial orientation, and innovativeness are associated with improved business performance. By using these strategies, new ventures can have a greater understanding of the environment and decide to sense and seize opportunities, and as a result, change their resource base and succeed. Strategic orientation as a strategic choice is a source that helps firms build DCs in fast-

changing environments (Li & Zhou, 2010; Abdoli et al., 2021) because it is deeply integrated into the daily routines of the firm and therefore makes it difficult for the competitors to imitate.

Skill is one of the characteristics of an effective management team for developing DCs. What distinguishes the new IT ventures studied here from the existing literature is identifying features such as up-to-dateness, ambition, realistic self-belief, observation and idea generation, product presentation skills, marketing skills, surveying skills, and price control. The creation and subsequent use of DCs depend on the entrepreneur, the entrepreneurial team, or the firm's senior management's perception of opportunities to change existing routines or resource configurations. In line with these findings, D'Annunzio et al.(2015), Teece(2014), and Ahmadpour Dariani et al.(2020) argue that the role of individual action by entrepreneurial managers helps create and shape capabilities and determine how they are developed.

In addition to the resources and capabilities in the existing literature, new IT ventures in this study considered other concepts as important in developing DCs in the firm, including allocating equity to team members, talent management, human resource evaluation, and team feedback. Although some previous research shows that new ventures need to decide what resources to gather and how to configure them to create value for the customers in an uncertain context regarding the end product (Santos & Eisenhardt, 2009), this research found the firms would allocate equity to the team members and attract intelligent and talented people and use team feedback to improve the production process and achieve better performance.

One of the critical and different factors in the results of this research is environmental factors. This research's environmental factors include dynamism, hostility, and heterogeneity. Environmental hostility can occur through intense competition that sometimes quickly excludes new and small businesses from the market. Unfavorable demographic trends, such as the sharp decline in Iran's population and the gap that has occurred since the late 70s or the emergence of the Covid-19 crisis, have caused a decrease in demand for new ventures' products and services. Also, severe regulatory restrictions can have adverse effects on new ventures. The challenges of the technological infrastructure have not only led to a decrease in demand by restricting businesses but also hindered the development of businesses and even the creation of new ventures. However, dynamic capabilities through the combination of available resources and the creation of new resources lead to the creation of "Bricolage" for new ventures to ensure their survival and gain a competitive advantage in such an environment.

Since the environment influences people's decisions to sense and seize opportunities, factors such as industry dynamics, the intensity of competition, laws, and regulations, and sanctions in Iran and the face of businesses, especially new ventures, prevent them from developing their capabilities in such environmental conditions and employing their resources in the best way. Arthurs and Busenitz (2006) argue that institutional factors like new government regulations can motivate DCs' development. The intensity of competition is also an important factor in the effectiveness of DCs. When businesses compete in resource-constrained environments, DCs become the basis for adapting to competitive pressures and survival. On the other hand, Winter (2003) states that the pace of change in an industry plays a role in the decision to develop and expand DCs, and their development is limited by the institutional environment in which the firms are located. In this study, some other factors were also identified, including high market growth rate, technological infrastructure challenges, and Internet-centeredness, which were important for the interviewees. For example, as the market growth rate increases, so does a firm's ability to manage customer relationships. Or, due to existing sanctions, the parts needed by the firm cannot be imported, and as a result, the production faces some challenges. Alternatively, the introduction of new software impacts the existing infrastructure of the firm. Moreover, the online business environment increases the speed of responding to market needs. Alternatively, when the system is dynamic, the firm can adaptably respond to environmental changes.

The firms interviewed – built based on creativity and innovation – try to strengthen their entrepreneurial team and employ talented people with special skills to create superior value for the firm's survival. These firms are more dynamic in achieving this concept through research and development, innovation through mental shortcuts, deconstruction, and providing an entrepreneurial environment. Developing DCs enables firms to accept radical changes (Nieves & Haller, 2014). Businesses, especially high-tech firms, depend on their ability to develop radical products, services, or

processes to survive and succeed (Schoonhoven, 1993). The relationship between DCs and a firm's performance is more complex than a direct and straightforward impact. This relationship is rather indirect and through some mediating variables (Zahra et al., 2006; Beigi et al., 2022) in this research, the development of DCs improves the firm's performance indirectly through the radicalness of the goods and services development process.

Conclusion

This article contributes to dynamic capabilities theory by showing how a combination of resources embedded in new venture routines drives the development of different dynamic capabilities in their portfolio.

In general, it can be said that these antecedents enable new ventures to sense and seize opportunities and transform their resources, and as a result, lead to the products, services, radicalness, and the firm's distinguished performance compared to other businesses. New IT ventures can implement better strategies for their businesses by investing in skilled and talented people and, as a result, achieve innovation and optimal performance. It is also possible through human resources management in the process of job verification and training programs to empower employees through open innovation. Furthermore, new IT ventures are more competitive than other industries because they act in a more dynamic environment. They are also more efficient than competitors because they use up-to-date information and knowledge and follow environmental trends.

Future Research Direction

future studies could determine the relationship between the model's dimensions and consequences: The relationship between each dimension of the model and the consequences of the model should be measured separately by using descriptive survey research. Also, the hierarchical classification of the components specified in each dimension of the model, the possible strong relationships between them, and their probable specific pattern can be explained in future studies.

This cross-sectorial study has investigated new IT ventures in the context of Iran. Future research can compare other industries and regions. Additionally, we suggest that future research studies the development of dynamic capabilities in the internationalization of new ventures.

It is also suggested that future research should focus on strategies for developing dynamic capabilities in new ventures. On the other hand, it is essential to examine the background factors affecting the development of dynamic capabilities in new businesses.

References

- Abdoli Mohamadabadi, T., Ahmadpour Daryani, M., YadollahiFarsi, J., & Sakhdari, K. (2021). The investigation and analysis of strategic orientations in the developing of dynamic capabilities in new ventures(case study: IT business). *Commercial Strategies*, 17(16), 46-29. doi: 10.22070/cs.2021.14083.1071
- Ahmadpour Dariani, M., Abdoli Mohamadabadi, T., & sakhdari, K. (2020). Designing a dynamic capabilities development pattern in new ventures(case study: IT Business). *Journal of Entrepreneurship Development*, 13(2), 161-180. doi: 10.22059/jed.2020.283386.653040
- Albort-Morant, G., Leal-Rodríguez, A. L., Fernández-Rodríguez, V., & Ariza-Montes, A. (2018). Assessing the origins, evolution and prospects of the literature on dynamic capabilities: A bibliometric analysis. *European Research on Management and Business Economics*, 24(1), 42-52.
- Ambrosini, V., & Bowman, C. (2009).What are dynamic capabilities and are they a useful construct in strategic management?. *International Journal of Management Reviews*, 11(1), 29-49.
- Arthurs, J. D., & Busenitz, L. W. (2006). Dynamic capabilities and venture performance: The effects of venture capitalists. *Journal of business venturing*, 21(2), 195-215.
- Baker, T., & Nelson, R. E. (2005). Creating something from nothing: Resource construction through entrepreneurial bricolage. *Administrative Science Quarterly*, 50(3), 329-366.
- Barney, J. B. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99-120.
- Barratt, M., Choi, T. Y., & Li, M. (2011).Qualitative case studies in operations management: Trends, research outcomes, and future research implications. *Journal of Operations Management*, 29(4), 329–342.
- Barreto, I. (2010). Dynamic capabilities: A review of past research and an agenda for the future. *Journal of management*, 36(1), 256-280.
- Beigi, S., Malekakhlagh, E., Nosratpanah, R., & Safari, M. (2022). A framework of firm performance under the influence of Knowledge Management and Dynamic Capabilities: examining the Mediating role of Sustainable Competitive Advantage. *Iranian Journal of Management Studies*. (In Persian).
- Bitencourt, C. C., de Oliveira Santini, F., Ladeira, W. J., Santos, A. C., & Teixeira, E. K. (2020). The extended DCs model: A meta-analysis. *European Management Journal*, 38(1), 108-120.
- Bosma, N., Hill, S., Ionescu-Somers, A., Kelley, D., Levie, J., & Tarnawa, A. (2020). Global entrepreneurship monitor 2019/2020 global report. *Global Entrepreneurship Research Association*, London Business School.
- Čirjevskis, A. (2021). Valuing Dynamic Capabilities-Based Synergies with Real Options. *Journal of Risk and Financial Management*, 14(2), 69.
- Correia, R. J., Teixeira, M. S., & Dias, J. G. (2021). Dynamic capabilities: antecedents and implications for firms' performance. *International Journal of Productivity and Performance Management*, (ahead-of-print).
- Covin, J. G., & Lumpkin, G. T. (2011).Entrepreneurial orientation theory and research: Reflections on a needed construct. *Entrepreneurship theory and practice*, 35(5), 855-872.
- Covin, J. G., & Slevin, D. P. (1989).Strategic management of small firms in hostile and benign environments. *Strategic management journal*, 10(1), 75-87.
- Cyfert, S., Chwiłkowska-Kubala, A., Szumowski, W., & Miśkiewicz, R. (2021). The process of developing dynamic capabilities: The conceptualization attempt and the results of empirical studies. *Plos one*, 16(4), e0249724.
- Danneels, E. (2011). Trying to become a different type of company: dynamic capability at Smith Corona. *Strategic management journal*, 32(1), 1-31.
- D'Annunzio, C., Carattoli, M., & Dupleix, D. (2015).Dynamic capabilities associated with a firm's growth in developing countries: A comparative study of Argentinean SMEs in the software and tourism industries. *Journal of Entrepreneurship, Management and Innovation*, 11(4), 25-62.
- Delmar, F., & Shane, S. (2003).Does business planning facilitate the development of new ventures?. *Strategic management journal*, 24(12), 1165-1185.
- Duriau, V. J., Reger, R. K., & Pfarrer, M. D. (2007). A content analysis of the content analysis literature in organization studies: Research themes, data sources, and methodological refinements. *Organizational Research Methods*, 10(1), 5–34.
- Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management journal*, 50(1), 25-32.
- Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: what are they?. *Strategic management journal*, 21(10-11), 1105-1121.
- Eriksson, T. (2014).Processes, antecedents and outcomes of dynamic capabilities. *Scandinavian Journal of Management*, 30(1), 65–82.
- Ethiraj, S. K., Kale, P., Krishnan, M. S., & Singh, J. V. (2005).Where do capabilities come from and how do they matter?. A study in the software services industry. *Strategic management journal*, 26(1), 25-45.
- Gehman, J., Glaser, V. L., Eisenhardt, K. M., Gioia, D., Langley, A., & Corley,

- Glaser, B., & Strauss, A. (1967). *The Discovery of Grounded Theory Chicago: Strategies for Qualitative Research*. Chicago. In. Aldine Publishing.: Online.
- Hakala, H. (2011). Strategic orientations in management literature: Three approaches to understanding the interaction between market, technology, entrepreneurial and learning orientations. *International Journal of Management Reviews*, 13(2), 199-217.
- Helfat, C. E., & Peteraf, M. A. (2003). The dynamic resource- based view: Capability lifecycles. *Strategic management journal*, 24(10), 997-1010.
- Hjalager, A.-M. (2010). A review of innovation research in tourism. *Tourism Management*, 31(1), 1-12.
- Hosinzadeh, M., Valiyan, H., & Abdoli, M. (2021). The Effect of Dynamic Competitive Capabilities on Financial Reporting Quality: The Test of Source-Based Capabilities. *Iranian Journal of Management Studies*, 14(3), 527-545.
- Hosinzadeh, M., Valiyan, H., & Abdoli, M. R. (2021). The Effect of Dynamic Competitive Capabilities on Financial Reporting Quality: The Test of Source-Based Capabilities. *Iranian Journal of Management Studies*, 14(3), 527-545.
- Inan, G. G., & Bititci, U. S. (2015). Understanding organizational capabilities and dynamic capabilities in the context of micro enterprises: a research agenda. *Procedia-Social and Behavioral Sciences*, 210, 310-319.
- Kaplan, R. S., & Norton, D. P. (1992). *The balanced scorecard: measures that drive performance*. Harvard business review, 71-79.
- Karagouni, G., & Kalesi, M. (2011). Knowledge intensive entrepreneurship and dynamic capabilities in low-tech SMEs: Evidence from the Greek food sector. *MIBES Transaction on Line Electronic Version*, 5, 1-19.
- Katz, R. (1974). Skills of an effective administrator: *Harvard Business School Press*. 52(5), 90-102.
- Khin, S., Ahmad, N. H., & Ramayah, T. (2012). The integrated effect of strategic orientations on product innovativeness: moderating role of strategic flexibility. *Procedia-Social and Behavioral Sciences*, 65, 743-748.
- Kohli, A. K., & Jaworski, B. J. (1990). Market orientation: the construct, research propositions, and managerial implications. *Journal of marketing*, 54(2), 1-18.
- Kwon, S. J., Ryu, D., & Park, E. (2018). The Influence of entrepreneurs' strategic agility and dynamic capability on the opportunity process of new ventures: evidence from South Korea. *Academy of Strategic Management Journal*, 17(1), 1-17.
- Lawson, B., & Samson, D. (2001). Developing innovation capability in organisations: a dynamic capabilities approach. *International journal of innovation management*, 5(03), 377-400.
- Li, J. J., & Zhou, K. Z. (2010). How foreign firms achieve competitive advantage in the Chinese emerging economy: Managerial ties and market orientation. *Journal of Business Research*, 63(8), 856-862.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. Beverly Hills, CA: Sage.
- Ma, X., Zhou, Z., & Fan, X. (2015). The process of dynamic capability emergence in technology start-ups—an exploratory longitudinal study in China. *Technology Analysis & Strategic Management*, 27(6), 675-692.
- Macpherson, A., Herbane, B., & Jones, O. (2015). Developing dynamic capabilities through resource accretion: expanding the entrepreneurial solution space. *Entrepreneurship & Regional Development*, 27(5-6), 259-291.
- Mayring, P. (2010). *Qualitative Inhaltsanalyse. Grundlagen und Techniken*. Weinheim: Beltz.
- McDougall, P. P., Shane, S., & Oviatt, B. M. (1994). Explaining the formation of international new ventures: The limits of theories from international business research. *Journal of business venturing*, 9(6), 469-487.
- McKelvie, A., & Davidsson, P. (2009). From resource base to dynamic capabilities: an investigation of new firms. *British Journal of Management*, 20, S63-S80.
- Miller, D., & Friesen, P. H. (1983). Strategy- making and environment: the third link. *Strategic management journal*, 4(3), 221-235.
- Mosakowski, E. (2017). *Overcoming resource disadvantages in entrepreneurial firms: When less is more*: Oxford: Blackwell Publishers.
- Narver, J. C., & Slater, S. F. (1990). The effect of a market orientation on business profitability. *Journal of marketing*, 54(4), 20-35.
- Newbert, S. L. (2005). New firm formation: A dynamic capability perspective. *Journal of Small Business Management*, 43(1), 55-77.
- Nieto, M. J., & Santamaría, L. (2010). Technological collaboration: Bridging the innovation gap between small and large firms. *Journal of Small Business Management*, 48(1), 44-69.
- Nieves, J., & Haller, S. (2014). Building dynamic capabilities through knowledge resources. *Tourism Management*, 40, 224-232.
- O'Connor, G. C., Ravichandran, T., & Robeson, D. (2008). Risk management through learning: Management practices for radical innovation success. *The Journal of High Technology Management Research*, 19(1), 70-82.
- Pezeshkan, A., Fainshmidt, S., Nair, A., Lance Frazier, M., & Markowski, E. (2016). An empirical assessment of the DCseperformance relationship". *Journal of Business Research*, 69(8), 2950-2956.

- Pisano, G. P. (2015). A normative theory of dynamic capabilities: connecting strategy, know-how, and competition. *Harvard Business School Technology & Operations Mgt. Unit Working Paper*(16-036).
- Razmdoost, K., Alinaghian, L., & Linder, C. (2020). New venture formation: A capability configurational approach. *Journal of Business Research*, 113, 290-302.
- Renko, M., Carsrud, A., & Brännback, M. (2009). The effect of a market orientation, entrepreneurial orientation, and technological capability on innovativeness: A study of young biotechnology ventures in the United States and in Scandinavia. *Journal of Small Business Management*, 47(3), 331-369.
- Richey, R. G., Genchev, S. E., & Daugherty, P. J. (2005). The role of resource commitment and innovation in reverse logistics performance. *International Journal of Physical Distribution & Logistics Management*.
- Runfola, A., Perna, A., Baraldi, E., & Gregori, G. L. (2017). The use of qualitative case studies in top business and management journals: A quantitative analysis of recent patterns. *European Management Journal*, 35(1), 116-127.
- Santos, F. M., & Eisenhardt, K. M. (2009). Constructing markets and shaping boundaries: Entrepreneurial power in nascent fields. *Academy of management Journal*, 52(4), 643-671.
- Sapienza, H. J., Autio, E., George, G., & Zahra, S. A. (2006). A capabilities perspective on the effects of early internationalization on firm survival and growth. *Academy of management Review*, 31(4), 914-933.
- Sarasvathy, S. D. (2001). Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of management review*, 26(2), 243-263.
- Schilke, O., Hu, S., & Helfat, C. E. (2018). Quo vadis, dynamic capabilities? A content-analytic review of the current state of knowledge and recommendations for future research. *Academy of management annals*, 12(1), 390-439.
- Schoonhoven, C. B. (1993). *The innovation marathon: lessons from high technology firms*: Jossey-Bass Publishers.
- Seuring, S., & Gold, S. (2012). Conducting content-analysis based literature reviews in supply chain management. *Supply Chain Management: An International Journal*, 17(5), 544-555.
- Siems, E., Land, A., & Seuring, S. (2021). Dynamic capabilities in sustainable supply chain management: An inter-temporal comparison of the food and automotive industries. *International Journal of Production Economics*, 236, 108-128.
- Subramaniam, M., & Youndt, M. A. (2005). The influence of intellectual capital on the types of innovative capabilities. *Academy of management Journal*, 48(3), 450-463.
- Tajeddini, K. (2010). Effect of customer orientation and entrepreneurial orientation on innovativeness: Evidence from the hotel industry in Switzerland. *Tourism management*, 31(2), 221-23.
- Teece, D. J. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic management journal*, 28(13), 1319-1350.
- Teece, D. J. (2012a). Dynamic capabilities: Routines versus entrepreneurial action. *Journal of Management studies*, 49(8), 1395-1401.
- Teece, D. J. (2012b). DCs: Routines versus entrepreneurial action. *Journal of Management Studies*, 49(8), 1395-1401.
- Teece, D. J. (2014). The foundations of enterprise performance: Dynamic and ordinary capabilities in an (economic) theory of firms. *Academy of management perspectives*, 28(4), 328-352.
- Teece, D. J. (2016). DCs and entrepreneurial management in large organizations: Toward a theory of the (entrepreneurial) firm. *European Economic Review*, 86, 202-216.
- Teece, D. J. (2018). DCs as (workable) management systems theory. *Journal of Management & Organization*, 24(3), 359-368.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic management journal*, 18(7), 509-533.
- Teece, D., & Pisano, G. (1994). The dynamic capabilities of firms: An introduction. *Industrial and corporate change*, 3(3), 537-556.
- Tran, Y., Zahra, S., & Hughes, M. (2019). A process model of the maturation of a new dynamic capability. *Industrial Marketing Management*, 83, 115-127.
- VU, H. M. (2020). A review of dynamic capabilities, innovation capabilities, entrepreneurial capabilities and their consequences. *The Journal of Asian Finance, Economics and Business (JAFEB)*, 7(8), 485-494.
- Weaven, S., Quach, S., Thaichon, P., Frazer, L., Billot, K., & Grace, D. (2021). Surviving an economic downturn: Dynamic capabilities of SMEs. *Journal of Business Research*, 128, 109-123.
- Winter, S. G. (2003). Understanding dynamic capabilities. *Strategic management journal*, 24(10), 991-995.
- Wong, P. K., Ho, Y. P., & Autio, E. (2005). Entrepreneurship, innovation and economic growth: Evidence from GEM data. *Small business economics*, 24(3), 335-350.
- Wu, L.-Y. (2010). Applicability of the resource-based and dynamic-capability views under environmental volatility. *Journal of Business Research*, 63(1), 27-31.
- Yin, R. K. (2003). Designing case studies. *Qualitative Research Methods*, 5, 359-386.

- Yin, R. K. (2018). *Case study research and applications*. Sage.
- Zahra, S. A., Neubaum, D. O., & El-Hagrassey, G. M. (2002). Competitive analysis and new venture performance: Understanding the impact of strategic uncertainty and venture origin. *Entrepreneurship Theory and Practice*, 27(1), 1-28.
- Zahra, S. A., Petricevic, O., & Luo, Y. (2022). Toward an action-based view of dynamic capabilities for international business. *Journal of International Business Studies*, 1-18.
- Zahra, S. A., Sapienza, H. J., & Davidsson, P. (2006). Entrepreneurship and dynamic capabilities: A review, model and research agenda. *Journal of Management studies*, 43(4), 917-955.
- Zheng, S., Zhang, W., & Du, J. (2011). Knowledge- based dynamic capabilities and innovation in networked environments. *Journal of knowledge management*, 15(6), 1035-1051.
- Zollo, M., & Winter, S. G. (2002). Deliberate Learning and the Evolution of Dynamic Capabilities. *Organization Science*, 13(3), 339-351.