

Dynamic capabilities as a strategic flexibility enabler: organizational responsiveness to COVID-19

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Abstract

Purpose – To cope with the existing pandemic situation and to be organizationally responsive, firms need to be strategically flexible, where they need to develop dynamic capabilities (DCs) by continuously reconfiguring their resource base. To address such challenges, firms heavily rely on information and communication technologies (ICT) because of advancement in disruptive technologies. This study aims to explore techniques used by higher education institutional (HEI) leaders to successfully address challenges posed by global disruption, i.e. COVID-19 with the help of advanced ICT software such as Zoom, Google Meet and Microsoft Teams.

Design/methodology/approach – A qualitative approach was adopted to explore strategic factors such as strategic flexibility (SF) and DC that disclose shortcomings in the current extant literature. A total of 15 interviews were conducted with heads of departments of HEIs in the United Arab Emirates. Data were analyzed using NVivo software.

Findings – The findings suggested three dimensions of SF (resources, operational and collaborative) and four dimensions of DC (strategic planning, innovative, adaptability and technological) for firms to adopt to be strategically flexible, where DC serves as building blocks of SF.

Originality/value – This research provides a framework as an avenue for future researchers and practitioners on how to strategically manage their resources and be strategically flexible in turbulent environment such as pandemics. Theory-based investigations on strategic capabilities and DC from resource-based perspective are still under-researched, emphasizing the need for theoretically based research on strategic responsiveness, especially during the times of environmental complexities such as COVID-19 pandemics. This research enriches strategic management research by exploring the important antecedents of organizational responsiveness, including SF and DC together with the support of human factor, i.e. leadership qualities of HEIs managers. This study, to the best of the authors' knowledge, is among the first to systematically explore main dimensions of DC and SF based on the resource-based theory of strategic management in the Middle Eastern context.

Keywords Leadership, Educational change, Higher education institutions, Strategic flexibility, Dynamic capabilities, Responsiveness, COVID-19 pandemic

Paper type Research paper

Introduction

The existing pandemic of COVID-19 is an environmental turbulence that affects the workplace environment and fundamentally changing the work-life (Amis and Janz, 2020; Ansell *et al.*, 2020). Environmental turbulence is described as rapid, unpredictable, complex and dynamic changes that cause uncertainty (Khourouh *et al.*, 2020). According to the above notion, COVID-19 has affected and created uncertainty in almost all the industries across the world and generated a need of rapid digital transformation from conventional ways to the new ones (Ratten, 2020) through the support of information and communication technologies (ICTs). ICT is the “diverse set of technological tools and

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resources used to communicate, create, disseminate, store, and manage information” (Blurton, 2002). The growth of the disruptive technologies is based on the advancement and adoption of ICT (Gandini, 2019; Kenney and Zysman, 2016; Peticca-Harris *et al.*, 2020; Wood *et al.*, 2019). ICT adoption is simply the “willingness to take new innovative technologies related to computer and internet” (Kusumaningtyas and Suwanto, 2015).

Advancements in the ICT is providing huge support in every walk of life and has been very useful during the existing pandemic situation of COVID-19. Around the globe, governments have imposed lockdowns to contain the spread of this contagious disease and limit the people’s mobility to their homes. Such lockdowns have led people to do their earning and continue their jobs/businesses by working from their homes, which gave rise to the new normal known as “working from home” (WFH). In the current pandemic situation, all the organizations are imposing WFH strategies by using different ICT software such as ZOOM, Microsoft Teams, Blackboard and Webex. COVID-19 has also greatly affected the educational sector and many educational institutes are using the same ICT platforms such as Microsoft Teams, ZOOM and Google Meet and Webex for imparting knowledge and for catering the educational needs of the people. Educational institutions are undergoing rapid changes because of various factors such as globalization, technological development, changing knowledge and skills requirements and growing social and cultural uncertainty (AlShamsi *et al.*, 2020) and the global health crises of COVID-19 is an additional factor for educational institutes along with all the existing factors that needs to be strategically tackled (Dirani *et al.*, 2020).

When institutions are in the crisis mode, the role of leader’s guidance, i.e. interference of human (people dimension) factor, plays an important part and becomes even more crucial (Dirani *et al.*, 2020). They back up systems, processes and support employees to tackle challenges and overcome their fears and limitations caused by the crisis situation which ultimately will contribute to the employee success (Dirani *et al.*, 2020). The way leaders respond to the crisis could transform the social and economic foundations of their institutions and communities forever. In today’s rapidly changing and unsettled environment, leaders need to have the SF to quickly react and respond to rising issues (Shimizu and Hitt, 2004). For instance, leaders determine the flexible practices that affect the organizational design and consequently result in organizational responsiveness (Verdú and Gómez-Gras, 2009). Organizational responsiveness is based on the principle of flexibility (Verdú and Gómez-Gras, 2009) that how flexibly leaders respond to the environmental turbulent. Organizations with innovative leaders, agile employees and responsive governments can perform well in crises situations (Amis and Janz, 2020).

In the current situation, it has become strategically imperative for the leaders to rapidly recognize the market changes and introduce such changes within their organization by digitally transforming their institution. Digital transformation has gained strategic importance on leadership agendas (Fitzgerald *et al.*, 2014; Singh and Hess, 2017) because with the help of digital transformation, leaders are able to respond quickly to market changes and can easily plan, organize, and convey such changes to their organizational employees. Therefore, leadership is deemed to be a crucial enabling factor of SF (Escrig-Tena *et al.*, 2011). More importantly, technological advancements and market-orientation factors also act as potential enablers for any organizations for being flexible in their decision-making process, which ultimately improves the performance of the organization (Kumar *et al.*, 2022; Mathafena and Msimango-Galawe, 2022). Likewise, organizations also develop DC to deal with the change (Teece, 2018). Both SF and the institution’s DC depend heavily on the leadership’s vision and integration ability to execute the change (Zahra *et al.*, 2006). As such, organizational responsiveness and DC are hinged to the leader’s capabilities (Shalender and Yadav, 2019).

Raphael and Schoemaker (1993) identified key factors of firm’s success such as strategic industry factors and strategic assets and examined the conditions/circumstances that lead

to the sustainable economic rent. Strategic industry factors are the main determinants of the capabilities and resources of the economic rents, whereas strategic assets are the set of specific capabilities and resources of the firm designed by the firm's own management for gaining competitive advantage. Strategic assets produce economic rents for the company when they have distinctive features. This means that companies will only be profitable and gain competitive advantage when they adapt to the changing needs of the market and industry. Based on this fact, SF refers to the organization's capability to handle change (Zhou and Wu, 2010) and enables the institutions to facilitate the development of future business plans and respond quickly to the changing environmental conditions (Schilke *et al.*, 2018), whereas DC describes how under the changing situations, institutions tackle the rapid change by integrating, building and reconfiguring its internal and external competencies and resources (Eisenhardt and Martin, 2000; Teece *et al.*, 1997; Zahra *et al.*, 2006). DC also plays a significant role in improving institutional flexibility at strategic level to deal with the external changes (Wang *et al.*, 2015). Therefore, DCs serve as a foundation towards building SF (Singh *et al.*, 2013). Extensive literature review on the similar domain revealed that various scholars have investigated SF and DC in the context of commercial and manufacturing organizations (Brozovic, 2018) and there is a lack of relevant literature that addresses the changing needs of educational sector in the crises situation of COVID-19 pandemic (Ratten, 2020). The reason for this scarcity of relevant literature related to the response of educational sector in the turbulent situation is that most of the studies are mainly concerned to the corporate response during crises rather than the response of higher educational sector. Moreover, till date, there is no valid instrument available for measuring the DC, and various scholars have raised their concern for a valid measuring scale of this construct (Arend and Bromiley, 2009; Dutta *et al.*, 2005; Zahra *et al.*, 2006). The possible explanation for this objection is that SF and DC are not based on predefined concepts and/or may not necessarily intend to be measured. Similarly, Eisenhardt and Martin (2000) stated in their study that DC has its own uniqueness and peculiarities within a specific sector, and is in line with the Janssen *et al.* (2012) study, advocating the importance of designing a framework of SF and DC for the service sector. Hence, this implies that the scale of DC designed for one sector cannot be generalized for the other sectors and industries and there is a need to develop a valid measurement scale and conceptualization of these constructs for a particular industry. Hence, it calls for a need of future study emphasizing on the importance of conceptualization of DC and SF for a particular sector, which is higher education institutions in the current study context.

Enclosing the above arguments in a nutshell, the objectives of the study are twofold. First, the current study attempts to understand how DCs are developed and exercised by educational institutions that leads to SF in coping with the changes occurring during COVID-19 pandemic. Second, the present study intends to fill the gap by developing a valid construct of DC to examine the organizational responsiveness specifically for higher education institutions during pandemic times. The current study focuses on the higher educational sector of the United Arab Emirates (UAE) because of its vital role in achieving the country's economic development and vision, i.e. building a knowledge-driven economy (Ashour, 2020). The education sector is the top priority of UAE government because more than 60% population of the UAE is under the age of 29 (Ashour, 2020). Therefore, the development of the universities' DC in a knowledge-based economy will help in the progress of the institutions (Bejinaru, 2017) and will result in achieving the national goal.

This study is, to the best of the authors' knowledge, unique and first in the Middle East to explore the SF and DC within the higher education contexts during the crisis with the support of ICT implementation and helps the organizations to generate, integrate, develop and enhance their resources. This study addresses two important research question: *RQ1* – What DC dimensions were used to be strategically responsive to COVID-19 pandemic, and *RQ2* – What SF factors were implemented to make use of DC to be strategically flexible in times of COVID-19? The study takes into account the exclusive types of SF and DC

dimensions which reflect the uniqueness and peculiarities of higher education operations and coping mechanisms during the outbreak of COVID-19 pandemic. The study helps in enhancing the understanding of organizational leaders that how SF (resources, operational and collaboration flexibility) and DC (strategic planning, innovative, adaptive and information and communication technological capability) can be developed to reconfigure, adjust and manage higher educational institutions operations and resources during the turbulent circumstances/situations.

Relevant literature review

Strategic flexibility

Flexibility is a wider term and can be correlated with several organizational factors such as human resources, marketing, operations and strategy (Verdu and Gómez-Gras, 2009). However, a prevalent view on flexibility upon which several researchers are agreed is that flexibility is the organization's capacity to deal with uncertainty (Gerwin, 1987). Eppink (1978) reported that flexibility allows the organization to effectively and successfully respond to unforeseen environmental changes. Likewise, Toni and Tonchia (2005) and Kumar and Singh (2019) described "flexibility as organizations ability to change or adapt to substantial, uncertain and fast-occurring environmental changes that have a meaningful impact on the organizational performance". Another researcher stated flexibility as the organization's prime competitive weapon while operating in turbulent markets and uncertain environments (Kumar, 2020; Singh *et al.*, 2013). Moreover, Zhang and Cao (2002) investigated flexibility in the manufacturing sector and reported it as the organization's ability to adapt to the market changing needs by developing innovative organizational processes. In doing so, the organizations need to make flat organizational structure and create globally optimized and process-oriented goals. Subsequently, Zhang *et al.* (2003) integrated flexibility with manufacturing, and termed it as a manufacturing flexibility. In this study, the authors classified the manufacturing flexibility with capability and competence theory and declared it as an important element of value-chain flexibility. Manufacturing capability denotes the organization capability to maintain higher performance/productivity while manufacturing multiple products in a large volume which customer demands. Similarly, in the subsequent year, Zhang *et al.* (2005) defined flexibility in the context of logistics and coined the new term as logistics flexibility. Logistics flexibility is simply the firm's ability to efficiently and quickly respond to changing needs of the customer in outbound and inbound delivery, services and support. The authors reported that in the highly uncertain and dynamic environment, firms must respond quickly and efficiently to the changing needs of the customer by implementing logistics flexibility. To better understand this concept, Zhang *et al.* (2005) developed a framework of logistics flexibility and investigated its relationship with customer satisfaction. Likewise, Zhang *et al.* (2009) expanded flexibility in the domain of product development which resulted in two types of flexibility, i.e. product concept flexibility and product prototype flexibility. Product concept flexibility allows the firms to explore multiple product ideas and definitions, whereas product prototype flexibility helps the firm to gain customer feedback on the product design for making it more feasible for the customer.

Because the present environment and modern society are considered inconsistent, uncertain, complex and unpredictable, so in such case, the SF is deemed an important factor that helps the organizations (e.g. health sector; Kumar, 2022) to deal with today's complex and uncertain business environments (Brozovic, 2018; Haarhaus and Liening, 2020). For instance, Bera *et al.* (2022) examined the flexibility in the health sector via reducing patients' waiting time to deal with uncertain environments. Kumar (2022) determined the role of market-based flexibility to bring innovation performance in public health services.

SF refers to the organization's capability to recognize environmental shifts and allocate resources to quickly respond to the new environmental changes and plans for the alternative course of action if the allocated resources need to be suspended or reversed (Shimizu and Hitt, 2004). Likewise, Zhou and Wu (2010) stated that SF refers to the organization's capability to handle change. SF is primarily conceptualized as an organization's reactive capacity to respond to the changing market conditions; however, some studies have also recognized its proactive capacity (Brozovic, 2018) and illustrated SF as the proactive response to changes in the business environment (Matsuno and Kohlbacher, 2020; Sushil, 2015). Thus, SF is considered a multidimensional concept (Singh et al., 2013). SF is categorized into two main dimensions such as internal and external dimensions. The internal dimensions are flexibility in management, learning, human resources and information system. The external dimensions are flexibility in the production process, market, goods, procurement and market-focused SF for service provider and for market orientation (Javalgi et al., 2005; Singh et al., 2013; Sushil, 2015).

In spite of the increasing interest in SF (Matsuno and Kohlbacher, 2020), the conceptualization of this construct till date is surrounded by change and uncertainty (Brozovic, 2018; Johnson et al., 2003). MacKinnon et al. (2008) proposed five sub-dimensions that shape the SF. First, operational flexibility refers to the flexibility of the organization's business process and/or production. Second, human capital flexibility is the non-traditional work arrangements (e.g. telecommuting), the "flatness" of the organizational structure and adherence to a culture of flexibility that includes knowledge sharing/management. Third dimension is the information flexibility, which denotes the organization's information system and the ability to obtain the necessary knowledge both from its analytical and transactional systems. Fourth is the supply chain flexibility that describes the organizational capacity to add, eliminate and exchange data with its external supply chain partners rapidly and efficiently. Finally, financial flexibility is the organizational willingness to allocate resources and absorb all the flexibility costs before it begins paying for itself.

SF reinforces the positive effects of technological capability and emphasizes on the flexible use of resources to enhance the organizational performance (Cataltepe et al., 2022; Lin and Wu, 2014). Accordingly, maintaining SF in a dynamic business environment is one of the most critical activities of managers and organizations (Shimizu and Hitt, 2004). Literature review on the flexibility exhibits no single conceptualization of this construct and various scholars have used this term according to their study context because of which it has multiple variations in different fields (Singh et al., 2013).

Strategic flexibility and leadership

Organization SF depends largely on the humans than on any other technical factor (Singh et al., 2013) and requires leaders to play a role of catalyst for boosting it and for bringing change into the organization (Hitt et al., 1998). Leaders devoted special attention in determining the flexible practices that affect the organizational design and result in organizational responsiveness (Verdu and Gómez-Gras, 2009). Leaders with deep knowledge and wider experience are more prepared to rapidly recognize the market changes and introduce such changes within the organization. They are also able to respond quickly because of their ability to plan, organize and convey changes promoting phenomena. Therefore, leadership is deemed to be a crucial enabling factor of SF (Escrig-Tena et al., 2011) because leader's character affects the organizational SF and overall business performance (Shalender and Yadav, 2019).

Dynamic capabilities

DC has been investigated widely in the academic literature from the perspective of commercial and service firms (Eisenhardt and Martin, 2000; Teece, 2007; Teece et al., 1997).

However, the conceptualization of DC originates from the resource-based theory of strategic management, but it differs from the resource-based view because DC is the firm's ability to adjust to the dynamic environment, and serves as a key element in organization's strategic planning (Eisenhardt and Martin, 2000). Helfat and Peteraf (2003) defined capability as a firm's ability to undertake a set of coordinated tasks by using organizational resources to achieve its strategic goals. Other researchers considered it as enterprise's ability to integrate and reconfigure internal and external capabilities in response to environmental turbulences (Eisenhardt and Martin, 2000; Teece, 2007; Teece, 2012; Teece, 2018; Teece *et al.*, 1997; Winter, 2003). Moreover, Helfat *et al.* (2007) further argued that dynamic capability (DC) is the organization's ability to produce, extend and adjust its organizational resource base. However, Davies *et al.* (2016) reported a lack of consensus in the basic conceptualization of DC and indicated towards the insufficiency of empirical evidences on the subject. To fill the existing knowledge gap, the current study intends to examine the DC within the higher education sector. Other scholars are of the view that DC is a "learned and stable pattern of collective activities through which an organization systematically generates and modifies its operating routines in pursuit of improved effectiveness" (Zollo and Winter, 2002). Similarly, López (2005) viewed DC as a combination of learning process that creates unique know-how to adjust the firm's resources for implementing the better performance.

Many scholars have conducted qualitative studies to develop a valid instrument for measuring DC and argued that DC is not based on the predefined concepts and the construct is more subjective and abstract in nature, comprising the items that do not appropriately fit to this concept (Arend and Bromiley, 2009; Dutta *et al.*, 2005; Zahra *et al.*, 2006). On the other hand, Eisenhardt and Martin (2000) contended that DC have its own unique characteristics within a specific sector. In accordance to this, Janssen *et al.* (2012) in his study designed a framework of general DC for the service sector. Therefore, this study contributes in developing a valid construct for measuring the DC.

The extant literature posits diverse types of DC models related to service firms. For instance, Wang and Ahmed (2004) identified that DC includes adaptive, absorptive and innovative capabilities. Another study by Ordanini and Parasuraman (2011) developed a model for service innovation based on combining DC of customer orientation, collaborative competences and knowledge interfaces. Lichtenthaler and Lichtenthaler (2009) explored DC from knowledge management perspective. García-Morales *et al.* (2011) viewed DC as strategic by focusing on transformational leadership capability. A recent study by Efrat *et al.* (2018) developed a model of DC for international firms based on the four types of capabilities, i.e. adaptability, innovation, unpredictability and task-flexibility.

In this study, the paper will explore three types of dynamic capabilities namely: innovativeness, adaptability, and technological capability along with the environmental turbulence as a moderating variable. The three types of capabilities are innovativeness, adaptability and technological capability along with the environmental turbulence as a moderating variable. We believe that these capabilities are integral for surviving in a turbulent environment and environmental turbulence as moderator will be helpful in assessing the DC.

Innovativeness capability. Garcia and Calantone (2002) stated that innovation and innovativeness are often used interchangeably; however, there is a difference between both the constructs. Innovation mainly focuses on the effective execution of creative ideas (Amabile *et al.*, 1996), whereas, innovativeness is the firm's ability to introduce new ideas, processes, products or services (Hult *et al.*, 2004). Innovativeness is the firms' eagerness to engage in innovation (Efrat *et al.*, 2018). In this study, we will examine innovativeness capability in regards to a firm's willingness and ability to use different techniques, strategies and restructuring under a turbulent environment condition such as the COVID-19 pandemic.

Adaptability capability. Morgan *et al.* (2003) defined adaptability as the firm's ability to exploit the new opportunities and allocate its resources to quickly adapt to both opportunities and threats. In congruent to this, various scholars posited that adaptability capability is the firm's ability to quickly and timely adapt to the environmental turbulences (Dibrell *et al.*, 2007; Lyus *et al.*, 2011; Nemkova *et al.*, 2015). Adaptability capabilities help the firm to gain competitive advantage in the form of new opportunities (new markets) and threats (existing or new competitors and changing customer needs). Different researchers have examined adaptability in terms of export adaptability (Cui *et al.*, 2005; Griffith and Dimitrova, 2014) and reported that export adaptability is a prime capability for many organizations. Rose and Shoham (2002) indicated that firms must invest extensive resources to maintain certain levels of adaptability in the export market. However, such investment does not guarantee satisfactory return because of the dynamics related to the export markets. So, this study will examine adaptability capability from both academic and administrative performance.

Technological capability. Technologically advanced firm is in a better position to reshape their service delivery (Bhatt *et al.*, 2010). Well-defined technological infrastructure creates value for the firm and enables the company to effectively share information across different departments as well as with the external stakeholders. Byrd and Turner (2000) reported that a flexible IT infrastructure could indirectly facilitate a firm to achieve its desired competitive advantage. Bhatt *et al.* (2010) mentioned that flexible technological infrastructure enhances the company's ability to generate information and quick response to the turbulent environment by exploring innovative opportunities, which ultimately benefit the company in gaining competitive advantage. Fink and Neumann (2007), in their study, established a relationship between technological capabilities and organizational agility. Likewise, Bhatt *et al.* (2010) stated that firms with effective technological capability enhance its ability to respond to changing environment. To conclude, firms with flexible IT infrastructures could allocate and adapt their IT resources according to their information processing needs and easily generate timely and relevant information to improve its overall performance.

Callaway *et al.* (2009) studied the impact of information technology (IT) on SF and found that in a less dynamic environment, IT capabilities are linked with reactive SF, whereas, in a highly dynamic environment, IT capabilities are linked with proactive SF. So, it means that a robust IT system or capability can effectively contribute to the better management of competitor's information. Callaway *et al.* (2009) also identified the positive relationship between IT capabilities and the firm's internal activities.

Link between strategic flexibility and dynamic capability

As mentioned above, DCs are the fundamental elements that support various dimensions of SF (Singh *et al.*, 2013). Brozovic (2018) found that DCs are a vital enabler of SF and in an environmental turbulent condition, organizations maintain its competitive advantage through continuous adaptations, which closely link DC and SF under such condition. Several scholars have investigated the link between SF and DC. For instance, Brozovic (2018) argued that adaptability, agility and DC are often used in different studies when dealing with issues related to SF. Likewise, Verdu and Gómez-Gras (2009) reported that different similar terms concerning to flexibility have been used in the literature such as elasticity, sensibility, agility, adaptation capacity and DC. Similarly, Liu *et al.* (2013) described SF as a DC because it meets the functional requirements of DC. Haarhaus and Lienen (2020) stated that SF is a distinctive DC for effectively planning and surviving in the new competitive world because it helps in quickly identifying and responding to the changes or issues. They viewed SF as a distinguished type of organization's DC.

Moreover, Eisenhardt and Martin (2000) elucidated a number of SF capabilities, such as developing new products or markets, strategic renewal or using market power to restrict competitor's entry and the capability to rapidly shift to the change with minimal resources

(Hayes and Pisano, 1994; Krijnen, 1979). Different scholars have examined the relationship between SF and DC in relation to the new resources required for timely response to internal and external changes (Eisenhardt and Martin, 2000; Teece *et al.*, 1997). To effectively adapt to the changing and hyper-competitive environment, organizations not just need useful resources and capabilities but they also require DCs to improve and renew their organizational capabilities and resources (Teece *et al.*, 1997). Such DCs are important to promote organizational flexibility at the strategic level (Singh *et al.*, 2013). Helfat *et al.* (2007) and Toni and Tonchia (2005) posited that higher order DCs are required for achieving SF which needs a configuration of firm's technology, structure and culture aligned with the firm's capabilities (Grant, 1996). Therefore, the SF capabilities can be a DC (Teece *et al.*, 1997) because they are related to the new resource configurations needed to manage the change (Singh *et al.*, 2013). The above discussion shows that DCs are the building foundations for supporting SF, which also serves the present study purpose.

Environmental turbulence

Environmental turbulence refers to the temporary disturbances that occur because of environmental changes and usually have negative consequences for the organization (Wang *et al.*, 2020). Environmental turbulence is simply the rapid, unpredictable, complex and dynamic changes that cause uncertainty (Khourouh *et al.*, 2020). COVID-19 is one of the external threats/turbulences which affected the workplace environment and challenged the work-life (Amis and Janz, 2020). The outbreak of COVID-19 has greatly impacted the working environment, and based on the work nature, many organizational employees were directed to work from home and adjust to the new conditions, whereas the employees required onsite have been laid off (Kirby, 2020). The rapidly evolving situation of the pandemic makes it practically difficult for any leader to successfully prepare for effective scenarios. Yet, this environmental turbulence may consider an opportunity for organizations to respond quickly and dynamically to these changes. Organizations that are more sensitive to environmental changes have a strategic organizational capability to easily change and maintain without incurring high reorganization costs. So, it shows that organizational responsiveness is based on the principle of flexibility (Verdu and Gómez-Gras, 2009) and how flexibly leaders respond to the environmental turbulence. In other words, organizations with innovative leaders, agile employees and responsive governments can do well in the environmental turbulence situation (Amis and Janz, 2020).

Research methodology

To explore and gain further insights into the DC and SF dimensions of higher education institutions (HEIs) in times of COVID-19 pandemic situation, the study contemplates that the interpretivist epistemological stance with qualitative approach was deemed suitable. Interpretivism assumes that the knowledge of reality is gained only through social constructions such as consciousness, shared meanings, language, documents, tools and other artefacts (Saunders and Townsend, 2018). An interpretivism stance allows the researchers to navigate and better explain the phenomenon (i.e. DC and SF dimensions). On the other hand, the qualitative approach is suitable for a contemporary phenomenon; for example, COVID-19 which requires in-depth exploration and understanding (Collis and Hussey, 2013). Interviews were used as data collection method. Interviews are the most recommended and effective method of data gathering in qualitative research (Creswell and Clark, 2017). The semi-structured interview guide was considered for the current study. The interview guide for this section is attached to the Appendix. Interviews were conducted in May and June 2020. The main unit of analysis of the study is HEIs. Participants were the directors and managers of HEIs. These individuals are in a position to offer a detailed overview of the key strategies used as organizational responsiveness to COVID-19 pandemic situation of their respective institutions. It is worth mentioning that efforts were

made to include sample participants from a population of 112 HEI campuses (CHEDS, 2012) of all seven Emirates of UAE.

To select participants, convenience and purposive sampling were used. A convenience sampling method was used to select the participants those who were easily accessible to the researchers (Bryman and Bell, 2007). On the other hand, purposive sampling was used based on the assumption that helps researchers to discover, understand and gain in-sight, and therefore one needs to select a sample from which one can learn more (Merriam and Tisdell, 2015) or, in other words, information-rich cases from which a great deal about issues of central importance to the purpose of the research can be learnt (Patton, 2002). Purposive sampling is the most preferred sampling technique used in qualitative studies as it lets the researcher select purposely particular persons, events or settings that have important information pertaining to the subject matter under investigation (Cole and Maxwell, 2003). At the later stages of data collection, researchers found that theoretical saturation occurred during the 13th interview. Theoretical saturation means when no new information emerges from the data or the repetition of themes is occurring (Glaser and Strauss, 1967; Low, 2019). Three more interviews were conducted to allow data to provide with the emerging themes. However, no new themes emerged; hence, 15 interviews were conducted and data collection was concluded. Data were analyzed in qualitative data analysis software (NVivo) version 12.

Data were analyzed thematically. The data were arranged into conceptual categories under theory-driven or *a priori* codes and data-driven or emergent codes (Boyatzis, 1998). In the first stage, constant comparison method was used (Glaser and Strauss, 1967) for line-by-line coding of the data to develop concepts (Taylor *et al.*, 2015). During the second stage, codes were refined, similar conceptual categories were merged and an attempt was made to arrive at “core categories” integrating all categories (Gibbs, 2007). The third stage involved establishing and explaining relationships between codes. After analysis, for discussion, “pattern matching” (Ghauri, 2004) was done. In pattern matching, comparisons between empirically based patterns and prior theory were made. Finally, empirical findings were linked back to the wider theoretical literatures (Khattak, 2013).

Findings

The study identified four dimensions of DC, namely, strategic planning capabilities, innovative capabilities, adaptive capabilities (adaptability) and information communication technological capability and three dimensions of SF which are resources flexibility (material resource, human resource, financial resources), operational flexibility (academic and administrative) and collaboration flexibility. Each of the dimensions has been discussed below followed by the relationship between DC and SF in the pandemic situation.

Dynamic capabilities dimensions

This section analyses dimensions of DC, namely, strategic planning capabilities, innovative capabilities, adaptability and information communication technological capability.

Strategic planning capabilities. Strategic planning guides the direction of course of action during the unanticipated time of COVID-19 and was much needed to respond and adapt accordingly. According to Participant 1, who listed a set of steps taken by his institution as a part of strategic planning helped them overcome the challenges, such as:

- execute a plan to completely sterilize the campus;
- deactivate the campus access for all students;
- determine the minimum number of employees to work from offices;

- purchase headphones and cameras and distribute them to all academic and admin staff, according to need;
- purchase licenses for remote communication software;
- conduct internal workshops to introduce the programs used to work remotely; and
- prepare guidelines for students towards the eLearning operation.

Pre-existing systems (digital transformation processes) that were in place in HEI greatly helped with smooth implementation of strategies to keep activities going on in pandemic. As mentioned by another participant:

We changed the organization structure of the department during the last organization structure exercise to be structured for future technology implementation. We did nothing actually to change it in response to the pandemic. We were there as if we were expecting it (Participant 13).

Participant 6 mentioned:

We started with this digital transformation in my institution for around four years ago. We deployed or we invested heavily in technology and infrastructure and this helped us a lot to shift quickly into what we now call distance campus. So basically, all the infrastructure was in place.

In addition to the pre-existing system, proactive strategic measures taken by leaders in HEI and strategic leadership further facilitated the transition process during the pandemic. According to Participant 5:

The leadership at my institution was actively engaged with government decision makers in the higher education sector along with being proactive in doing the needed changes and being predictive of the upcoming challenges with many options and scenarios which in my opinion was the secret of our success.

According to Participant 7:

Higher leadership at our institution was very active during this period, we had a weekly meeting with the president and during those periods. There was really high level of motivation and information from the President.

Yet another Participant 4 acknowledged the same, stating:

So leadership in our university were very visionary. They really realize quickly the importance of the continuation of our institution and they took immediate actions. And that's, which was something that everybody was pleased with.

Here it is worth mentioning that government bodies (Ministry) played a very important role in the strategic planning processes. Government bodies played a huge role to guide academic institutions in taking proper measure to ensure safety, on the one hand, and smooth running of academic activities, on the other. For instance, Participant 3 stated: "We followed their [ministry] directions, i.e. up to 50% of each program courses can be delivered online". Another participant mentioned, "I have to say that the ministry was very active and was communicating with us in a timely manner [...]".

In addition, timely response as part of strategic planning was important to be strategically responsive as Participant (2) stated, "[...] because what happened is was really, really something astonishing, which I don't remember that we have delayed one single day or we have stopped one single day". Overall, the pre-existing system at HEIs, proactive approach of leaders and institutions, government bodies' guidance and timely strategic response helped HEIs overcome the challenges faced because of COVID-19 pandemic.

Information communication technology capabilities. HEIs experienced massive changes in terms of technological capabilities to respond to the pandemic. A wide variety of advanced

leadership in our university were very visionary. They realized quickly the importance of the continuation of our institution and they took immediate actions. And that's, which was something that everybody was pleased with". Further quick intervention by top management helped greatly in adapting to the pandemic situation. Participant (10) stated, "quick crisis committee was formed, consisting of the managers from all departments administered by president to contain the situation in a period of 3 weeks at all levels where necessary work was done". Another participant also confirmed the same stating "[...] within two weeks, we had the systems in place". The biggest role was of IT to ensure adaptability, Participant (7) stated, "[...] we really equip ourselves in (with) hardware and software with everything that was required to conduct our job and that happened in record time".

Innovativeness. Innovative capabilities are one of the main DCs that facilitated smooth transition towards virtual mode of online delivery in times of COVID-19 pandemic. Almost every HEI interviewed responded that they were highly innovative in their strategies and initiated innovative changes related to teaching and administrative activities to continuously amend their resource base to achieve optimum results. Innovation does not necessarily mean producing new products or services, it also means to reinvent organizational process and practices, and this was observed in many instances. Participant (15) mentioned, "We are now restructuring our operations in terms of the need, overlaps, and functionalities to align better from an efficiency perspective with the online delivery". For effective reconfiguration, innovative capabilities were used to enable HEI to transform their knowledge into practice in an innovative manner.

Participant 9 mentioned:

"[...] we've activated the virtual desk for operational departments in one week to serve our students and keep them connected with us along with activating the contact center operation remotely also in two weeks which was a plus for our students to have someone to respond to their concerns during the pandemic situation".

Innovative strategies were implemented to convert face-to-face internship to virtual internships. As mentioned by one of the participants (13):

We developed a program where students had to find a public company listed on stock exchange locally or in New York, which was heavily affected by COVID 19, for example, hotels like Hyatt chain of hotels. Students were given a list of different tasks to do, such as how the company was affected, how it responded to COVID 19, what was the impact on the revenues on the layoffs, etc. I think this was really an innovative way of coping with the new situation. The fact that we could not send our students for the actual workplace. In a nutshell, fortunately, we are familiar with these tools and able to make a smooth transition" (Participant 4).

Libraries were digitalized in innovative manner so students can have timely access to required course material. Participant 15 stated, "Students have been guided by sending electronic guiding booklets to them through their e-mails, and downloadable copies were put in the e-learning system for easy access". Innovative protective measures were put in place to handle technological glitches during assessments, as Participant 3 stated:

We changed our assessment tools to make sure that you know, first of all, the reason to reduce the tools is to make sure that we are not always going to be exposed to IT failure or problems with IT. Especially if we are going for synchronous exams. So, reduce the number of synchronous exams in favor of other types of assessment.

Strategic flexibility

SF in this study is the reactive flexibility to mobilize a responsiveness to a turbulent pandemic situation. The three dimensions identified in this study are resources flexibility (material resource, human resource and financial resources), operational flexibility (academic and administrative) and collaboration flexibility.

Resource flexibility. Different resources were reconfigured by redeploying and recombining them to address the challenges posed by the pandemic. Among the major resources reconfigured were material resources (infrastructure, library, IT tools, books, campuses, etc.), human resources (student, academic staff, supporting staff, etc.) and lastly financial resources that were used to support material and human resources. Both new and existing state-of-the-art technological devices were immediately made available to meet the new demands of transition. One of the participants (6) mentioned, “We ensured that we have the right infrastructure to handle COVID-19”. Participant 12 quoted, “We equipped ourselves in hardware and software with everything that was required to conduct our job and that happened in record time”. Integration of resources was regarded to be an important element of the transition process, as one of the participants stated: “[...] you must have a state-of-the-art tool to make sure that you can connect all the tools together from student services, from learning management system, from digital textbook platforms, etc., all these need to be integrated together”. Human resource flexibility included knowledge sharing/management, cross-functional training, outsourcing and other work arrangements such as telecommuting.

Participant 7 discussed about redeployment of human resources to tackle pandemic-related issues “You must have a ready faculty equipped with technology tools to be able to deliver. And that is where we as an institution, we have a specific or two standalone departments to handle the professional development for faculty”. Training was provided to all staff (academic and administrative) to enhance their skills on use of technology; one participant (12) mentioned, “We intensified the professional development for faculty during the pandemic and during the training week”. It was witnessed that financial resources were readily available to support digital teaching and learning as the pandemic hit the country. As such, there were no financial constraints that posited barriers in purchase of required equipment to ensure effective integration of technology in teaching and learning practices. As such, the prompt and seamless online transition was possible because of financial resources. According to Participant 2, “In a matter of days, we’re able to buy new software and the material that were necessary to conduct the operation and without stopping the process”.

Operational flexibility. Two types of operational flexibilities emerged from the interview data, academic and administrative. For the academic operational flexibility, an enormous amount of flexibility was offered in academic operations from every aspect, taking from enrollment till graduation. Global recruitment of students and faculty was made possible as a participant (3) stated:

You (we) have an opportunity to recruit faculty from anywhere. You (we) have the opportunity to recruit students from around the globe. You (we) would have the opportunity actually to push the boundaries for campuses with no borders. You have the opportunity push for ‘Uber’ like education [...]”.

Course outsourcing was another interesting flexible response to pandemic “[...] in the future you will see possibly part time lecturers being outsourced from other countries to teach” (Participant 4).

Assessments were restructured to cope up with online teaching strategies, as one participant (5) mentioned, “we changed our assessment tools to make sure [...] we are not always going to be exposed to IT failure or problems with IT. Especially if we’re for synchronous exams”. Academic operational flexibility also led to cost-effectiveness in terms of merging sections to deliver easily online as compared to face-to-face classes. For instance, Participant 9 reported that “the good thing that happened is that because of online delivery, we were simply able to use our existing faculty to teach cross campus sections and that hopefully will help in terms of the shortage of the faculty and/or the small sections will be merged across the campuses. Then instead of having three faculty

teaching sections of 12 students will simply be merged into one section". UAE has a culture that is conservative in terms of having mixed gender classes, so challenges of mixed gender classes will be eased with having online mode of teaching:

Now when we switched to the online teaching, so it seems natural that we can open registration to a section to other campuses and mixed gender. This opens new possibilities for how we manage the courses. Professors can now teach one section that has students from different campuses and different genders" (Participant 8).

On the administrative side, many operational changes were implemented to ensure smooth operations of HEIs. Administrative operations included activities related to procurement, HR, finance, marketing, student services and so on. HR department operations were the main focus of operations as majority of important decisions were related to HR; for example, training, termination and recruiting. One of the participants (7) mentioned, "I think given the competition that exists between different parts of the institution. I think the HR work continued successfully in my opinion". Services related to students were also flexibly automated "student services were fully automated and made online. A student can access credentials online" (Participant 14). It was observed that continuous efforts were made to further automate processes to ensure untroubled digitalization, as a participant (6) mentioned, "now we are revisiting every single department service catalogue, we are identifying which are already automated, which are not and we are putting a plan for the automation of those [...] and we would reach 100% automation".

Finance department operations were automated to enable online fees payment. On this argument, one of the participants reported that "finally we have enhanced our SIS system and launched the online self-service version to all students that allow them to pay their fees easily" (Participant 14). Student Services Department came up with the creative idea of maintaining student's life active and alive, as Participant 4 mentioned:

We used Zoom webinar/meeting features to conduct various activities online to create a virtual student life. Due to these rapid changes, we were able to stabilize our services to our students during COVID19 situation.

Collaborative flexibility. Collaboration is important as it supports organizational goals by networking and collaborating with other organizations and governing bodies. As a result of possessing different DCs, for example, technological, innovative and adaptive capabilities, collaborative flexibility was very much possible in times of pandemic. Recently, authors studied collaboration as auxiliary flexibility in the health sector to promote market-focused flexibility in terms of volume and clinical-mix flexibility (Kumar *et al.*, 2018). Of the prime importance was a collaboration with governing bodies as important operational instruction came from the Ministry of Education (MoE). One of the participants (1) mentioned:

I think there are two stakeholders, which played a big part in what we were doing and what we were planning to do. One is the government, which gave general instructions related to HE e.g. closing of the campuses (for safety purposes) and the other was CAA (Commission for Academic Accreditation), which gave academic instructions on program offerings.

Another participant (2) mentioned that "Well, we are in close contact of course with the Ministry of Education. They have been very supportive by giving us flexibility and conducting all of our courses online". A very kind gesture from Ministry of Education towards students was giving HEIs flexibility in grading system "MoE allowed students who want to turn their grade from (A, B, C etc.) it into a pass or fail grade to avoid affecting their GPAs due to the whole new situation" (Participant 3). This was a relief for students' parents and even faculty, who were still struggling to cope up with the new normal.

Furthermore, the interdepartmental collaboration also played a huge role in creating strategic flexibilities "other collaboration is with HR and Registrar in planning online classes across the campuses, scheduling classes, deliver classes to overcome this shortage of the

faculty, which may have happened if we didn't do anything about that" (Participant 8). Collaborative flexibility proved helpful not only with government organizations and departments within HEIs but also with external business stakeholders. For instance, in line with the latter, one of the participants reported "In order to be proactive and be able to know what is coming, we had major relationships with the providers, such as Blackboard" (Participant 10).

Linking dynamic capabilities and strategic flexibilities

Findings suggest that SF is built on DC. As mentioned by a participant (9) about adaptive capabilities, which helped them to overcome challenges because of the unprecedented situation of COVID-19, "We had some concerns with that would we really be able to adapt to the situation which was like an unknown environment, because we all heard about working in the distance mode before that, but nobody had experienced that in a real situation before that time, however, we did it successfully" (Participant 8). This was evident from almost all participants' responses; one of them (2) mentioned, "we know that 95% of our students are satisfied with the online services in the model that is in place and I think we were very glad to know that". Furthermore, Participant 3 acknowledged they were flexible in their offerings because of the leadership capabilities of their institution, "So leadership in our university were very visionary. They really quickly realize the importance of the continuation of our institution, and they took immediate actions. And that is, which was something that everybody was pleased with". It was also the innovative DC that catalyzed the transformation, an interviewer stated, "so the innovative approach that (our institution) used actually is the orchestration of the different components and an ecosystem to work together to ensure delivery". Another participant (10) also confirmed that their technological capabilities enabled them to deliver online classes within a matter of days, "within two weeks, we had the systems in place. We bought the licenses, we trained people, so everything was in place and ready and when the decision came from the ministry, I mean, it was very seamless for us and the business was as ready". Further, another participant (12) confirmed the same, stating, "So among the most important strategies is first of all the institution has quickly equipped itself at that time in a matter of days".

Reconfiguration of resources and capabilities enabled smooth transition, as one of the participants (4) stated, "In my department, we were very flex in doing the transition from normal to a digital system as we had continuous support to all team members in order to increase their competencies to be more efficient while working remotely. We've conducted several orientation sessions on how to use new system MS Teams & Zoom". Yet another participant (2) confirmed the same, stating "Yes, more focus on the hybrid method of teaching or online programs and flexibility of working from home and equipping the institution with the technological tools to support the new style of operation". Such reconfiguration of resources was evident as quoted by a participant (1), "We train our staff, and we communicated properly with our students. And we also train them and we also made sure that our staff is aware of the challenges and the need to also be flexible in terms of teaching and also in terms of assessment". Business process which makes important part of organizational resources were reconfigured to address these challenges, as a participant (6) stated, "In terms of business processes, we have transferred to paperless work, e.g. (petitions, approvals, requests [...]), which saved more time to complete each of these processes and students initiate these processes online rather than physically applying for them through our offices before COVID19. This could be the change in our business processes preserving the same sequence of approvals & steps but online". There are several capabilities relating to SF, such as developing new products or markets strategic renewal or using market power to restrict entry of competitors and the capability to switch gears relatively quickly and with minimal resources. Participant 7 acknowledged by stating that, "I believe that we've done an

excellent job in terms of fast response to the unforeseen changes in the private higher education sector and we will not stop developing and enhancing our system to be always at the front”.

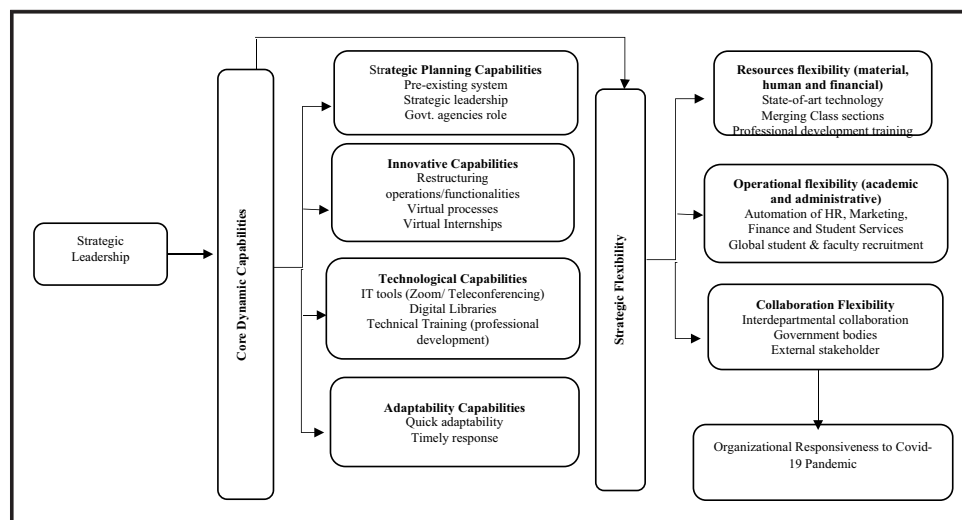
Based on the outcomes from the above findings, this study proposed a framework that depicts the interplay between different dimensions of DC and SF, as shown in [Figure 1](#).

Conclusion and discussion

The present study intends to explore DCs that are useful and strategically responsive for the higher education institutions in turbulent environment such as COVID-19. The study also investigated that how different factors of SF can be implemented in organizations that make use of strategically flexible DCs in the pandemic situation of COVID-19. This study has also identified unique dimensions of SF (i.e. resources, operational and collaboration flexibility) and DC (i.e. strategic planning, innovative, adaptive and information and communication technological capability) that projects the uniqueness and responsiveness of educational institutes in the pandemic situation. Lastly, the current study also proposed a model for higher educational leaders that how SF and DC can be developed to manage the resources and operations of higher education institutes in the crisis situations.

To cope up with the challenges of current pandemic, governments of different countries have relaxed the lockdown policies by imposing the social distancing conditions and other safety measures. During the pandemic time, ICT has proven very beneficial and productive and ensured rapid interactions in all the sectors and stakeholders, including education, accounting and banking, etc. ([Richter, 2020](#); [Sharma and Baoku, 2013](#)). ICT has enabled organizational responsiveness by making the strategically flexible organizational environment that in the time of pandemic resulted in work–family balance ([Dockery and Bawa, 2018](#); [Kelly et al., 2014](#)), improved job satisfaction ([Castellacci and Viñas-Bardolet, 2019](#)), increased job opportunities, less job stress ([Gajendran and Harrison, 2007](#)), reduction in the commuting time and brought several positive outcomes ([Almahamid, 2019](#); [Carrigan et al., 2020](#); [Sharma and Baoku, 2013](#)). Implementation of ICT at organizational level gave rise to the new normal, i.e. WFH that resulted in increased financial performance of the firms ([Advisors, 2010](#); [Bloom et al., 2015](#)). To gain the deep insights of the use of ICT and WFH concept, this study identified different factors of DC that further lead towards the SF within the higher education sector. Findings of the study show that DCs are fundamental

Figure 1 Framework of the study



in the higher education institutes and further supports the different dimensions of SF (Rindova and Kotha, 2001; Swafford *et al.*, 2006). The study results are congruent to the findings of Brozovic (2018) who also found that DCs are the important drivers of the SF. The reason for this positive result is that environments are constantly changing in the current times, and for surviving and succeeding in the market, organizations need to maintain its competitive advantage through continuously adapting to new changes.

To effectively adapt to the changing and hyper-competitive environment, organizations do not just need useful resources and capabilities but they also require DCs to improve and renew their organizational capabilities and resources (Teece, 2018; Teece *et al.*, 1997). DCs are important for promoting organizational flexibility at the strategic level (Barrales-Molina *et al.*, 2013; Ouakouak and Ammar, 2015). For achieving the organizational SF, many scholars have emphasized on developing the higher level of DC (Helfat *et al.*, 2007; Toni and Tonchia, 2005), which requires the configuration of firm's technology, structure and culture in accordance to the firm's capabilities (Grant, 1996). Furthermore, many researchers are of the view that SF and DC are linked to each other in the form of existing and new resources required for the timely response to internal and external changes (Eisenhardt and Martin, 2000; Teece *et al.*, 1997).

The present study has identified two levels of SF for the higher educational institutions in the crisis situation. The first is the flexibility at organizational level and the other one is flexibility at decision makers (leadership) level. Both organizational and decision makers level of SF are necessary for smooth transition of an organization to adapt to the environmental changes and lead to the collaborative, operational and resources flexibility (Combe and Greenley, 2004). Pre-existing systems and organizational preparedness of higher educational institutes for unforeseen circumstance enable the educational institutes to smoothly transfer from physical to online mode, which is further backed by the proactive strategic measures taken by the organizational leaders.

There are four main dimensions of DC that are observed in the higher education institutions, namely, strategic planning, innovativeness, adaptability and information and communication technological capabilities that further lead to resources, operational and collaborative flexibilities. Swafford *et al.* (2006), in his study, mentioned that DC serves as a foundation for achieving SF. So, the study findings also correspond to the scholarly work of Swafford *et al.* (2006) because in our study, it has been proven that the DC also leads towards the SF of the higher educational institutes. The present study results are also consistent with the Singh *et al.* (2013) study who identified further sub-dimensions of DC, i.e. market, supply chain, expansion and new product capabilities according to the nature of the manufacturing industry. Although these dimensions are different from our study context but in a broader perspective technological, innovative and adaptive capabilities are very much prevalent in achieving SF both in the education and in the manufacturing industry.

Many past studies were focused on investigating the different dimensions of DC such as orientation (proactive versus reactive), time (fast, prompt, etc.), intention and choices perspectives rather than SF (Brozovic, 2018; Kazozcu, 2011; Lin and Wu, 2014; Liu *et al.*, 2013). Few scholars have attempted to identify the dimensions of SF such as Wang *et al.* (2019) determined two dimensions of SF, i.e. resource and coordination flexibilities. According to Wang *et al.* (2019) resource flexibility is the firm's ability to identify alternative costs and use of resources, whereas coordination flexibility refers to redefining, configuring and deploying existing resources. In relation to this, the present study has identified broader dimensions of SF such as resource flexibility (human, material, financial), operational flexibility (academic and administrative) and collaborative flexibility (collaboration with external bodies, i.e. ministry, businesses and others) in the higher education sector and are compatible with the previous studies. The study findings can easily be generalized to the other sectors and industries with minor modifications based on the contextual differences because SF is a context-dependent construct and contingency-based approaches are

applied according to each industry/sector context (Bamel and Bamel, 2018; Guo and Cao, 2014).

SF is the source of competitive advantage (Bamel and Bamel, 2018; Xiu *et al.*, 2017) and helps the organizations to achieve competitive advantage in a turbulent environment. HEIs use existing set of resources or developed new ones (DC) in a chaotic environment. In doing so, the HEIs, in the pandemic environment, developed new modes of teaching and learning and focused on employee's professional training by adapting new innovative ways such as digital transformation (ICT capabilities). This adaptation of new innovative ways helped the organization to change the organizational culture and make it more innovative and learning-oriented. Previous studies reported that innovative organizational practices results in SF and improved organizational performance (Xiu *et al.*, 2017). Our study findings with regard to the HEIs process in coping with COVID-19 situations support the model that emphasizes on the role of strategic leadership, organizational ability to build DC, development of human capital, effective use of ICTs and implementation of new organization structures and culture (innovative and learning-oriented) (AlShamsi *et al.*, 2020; Hitt *et al.*, 1998).

In conclusion, the relationship between SF and DC exists in the form of integration of new resources necessary to timely respond to the internal and external changes (Eisenhardt and Martin, 2000; Teece *et al.*, 1997). DC and SF both help in increasing the efficacy of HEIs in the crises situation such as COVID-19. Furthermore, the study found that ICT has also increased work and individual performance of many employees (Castellacci and Viñas-Bardolet, 2019; Dockery and Bawa, 2018) along with dissatisfaction created among few because of increased work load, less socialization, increased anxiety (Song and Gao, 2020) and additional stress for some technophobic users (Bellini *et al.*, 2019; Choudrie and Zamani, 2016).

Implications to theory and practice

The study has numerous implications for academicians and practitioners of higher education. First, the study has qualitatively explored the phenomenon of DC and provides deep insights that how DCs serve as a building block for SF in the form of generating organizational responsiveness at times of crises/turbulent environment. Second, our study has deeply explained about multifaceted directions of DC and SF in the higher education context where leader's capabilities can serve as a basis/foundation for bringing change into the organization at turbulent situations. This study is a novel contribution to the literature in terms of understanding the impact of SF on the higher education industry and how DC leads towards the SF that helps in generating organizational responsiveness at the time of crises such as COVID-19 (Easterby-Smith *et al.*, 2009; Peteraf *et al.*, 2013; Vogel and Güttel, 2013). The study has also provided the acute insights of the higher education industry of the developing country, i.e. UAE, and what strategies different educational institutes have adapted to cope with the pandemic situation of COVID-19. Third, the study also has useful implications for management and policymakers of higher education in the way that this study helps them in understanding the importance of developing strategically flexible and responsive DCs that are not only applicable to the pandemic/crises situation but also be beneficial for situations other than pandemic. DCs and SFs are the necessary strategic orientations for the organizations that generate reactive and proactive organizational responses not only in the crises but also in the other normal circumstances and situations. Moreover, the study also has practical implications for organizational leaders especially in the context of higher education by providing them deep insights about the different dimensions of SF and on that basis how they can develop different DCs required for generating organizational responsiveness. This study also enhance the leaders' understanding in developing existing systems and processes that ensures timely response and readiness to unexpected events and circumstances.

Key lessons learnt

Previous RBV studies have hugely focused on how static organizational resources are a source of competitive advantage (Barney and Arian, 2001). In hindsight, how these resources can be leveraged and orchestrated from the DC perspective are largely overlooked (Hawass, 2010). As such, the objective of this study was to fill this gap by exploring how valuable, rare, inimitable, non-substitutable resource can be leverage for firm's competitive advantage from DC's perspective. Our study suggests that idiosyncratic DC is an important component of strategic response without which there would be no SF. As such, this lightens potential micro-foundations of SF and DC and contributes to the arguments related to the ambiguity of dimension of SF (Singh et al., 2013; Toni and Tonchia, 2005). By qualitatively broadening the scope and nature of SF, our study takes a small step towards conceptual unification of other scholar's informed conceptualization. Also, this generates meaningful insights on the importance of DC and SF towards strategic response in times of environmental turbulences (Teece et al., 1997).

Limitations and future research recommendations

While focusing only on certain dimensions of SF and DC, this study has enabled us to gain an in-depth understanding, yet at the same time, this could have also limited our ability to explore other dimensions that could be a source of meaningful insights and thus its implications on strategic responsiveness. Future qualitative research is encouraged to explore other dimensions of SF and DC to build on our insights. Further, we only focused on the head of departments to build our understanding of SF and DC; future research could include other participants such as faculty and support staff as they too contribute to organizational outcomes. Furthermore, this study was conducted in the context of higher education in UAE, hence it can be extended to other cultures and other industries such as hospitality, tourism and aviation to explore the micro-foundations of strategic responsiveness, as a great shift from office-based work towards modern WFH arrangements is anticipated with the support of ICT, also called as telecommuting/remote working (Van der Lippe and Lippényi, 2020).

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Appendix. Interview questions

1. Can you please comprehensively describe different tool and strategies you used to handle COVID-19 situation, i.e. carry out your administrative work remotely – moving to complete online teaching, assessments, innovative online services and activities offered to students?
2. Have you carried out any restructuring in terms of academic programs and academic administration? Meaning how did you redefine product (academic programs/ administrative activities) strategies to suit current situation? If so, how please?
3. Do you think the above-stated strategies/techniques have helped you to effectively respond to the turbulent environment and stand better than your competitors?
4. Can you please highlight the challenging/ease of getting adapted to pandemic in terms of altering existing strategies pertaining to academic teachings (e.g. provide training) and administrative activities? (this question is valid only if interviewee has made any changes).
5. How has the response from the staff, faculty and students in terms of adapting to the new mode of online working? Can you please elaborate?
6. Can you please elaborate on the technological resources and capabilities that your organization possess and what role did it play in handling COVID-19 situation?
7. In responding to current changes, how did you redeploy your department/organizational resources effectively? *Resource redeployment is a process of resource management involving the decision and implementation of how to apply the firm's resources to different organizational and market settings.*

8. How flexible was your department/institution in terms of business process, knowledge sharing/management, non-traditional work arrangements (e.g. telecommuting), information system, dealing with external supplier and partners?
9. Can you explain any collaborative efforts between different departments (e.g. HR, IT, Finance) to develop strategies and/or innovative solutions to overcome challenges?
10. Can you highlight the collaborative efforts between your institution and students and government bodies (ADEK)?
11. Can you please discuss any other flexibility that was offered to overcome challenges related to COVID-19 situation? (This is to cover other flexibility strategies that we might have missed in our questions).
12. In your expert opinion, is higher education sector more/less impacted by COVID-19 situation as compared to other industries? If, yes, how, please explain?
13. Has current situation offered your institution with any opportunities or threats? If yes, how, please specify few of them.
14. Do you think that your current experience and changes in your work context will affect your business in the future (after COVID 19)? And how?

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