

The role of organizational capabilities on e-business successful implementation

Rima Kabrilyants^a, Bader Yousef Obeidat^{a,b}, Muhammad Alshurideh^{c,d*} and Ra'ed Masa'deh^e

^aDepartment of Business Management, School of Business, The University of Jordan, Amman, Jordan

^bThe Faculty of Business and Law, The British University in Dubai, United Arab Emirates

^cDepartment of Marketing, School of Business, The University of Jordan, Amman, Jordan

^dDepartment of Management, College of Business Administration, University of Sharjah, Sharjah, United Arab Emirates

^eDepartment of Management Information Systems, School of Business, The University of Jordan, Amman, Jordan

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ABSTRACT

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This study sought to investigate the role of organizational capabilities on e-business successful implementation. The proposed conceptual framework was tested on a sample of 16 Jordanian companies with an online involvement, and a total of 263 valid returns were obtained in a questionnaire based survey. The results provide quite a strong support for the hypothesized relations: organizational capabilities, namely learning organizational capabilities and IT capabilities have significant impact on e-business implementation success. However, no statistical support was found for the significant impact of the knowledge management capabilities on e-business successful implementation. This study implies that the policy-makers should focus on formulating policies and targeting appropriate organizational capabilities to ensure effective e-business implementation, which will eventually yield positive results for the company as a whole. An organization needs a well-designed IT infrastructure to create and maintain the organizational knowledge deriving from organizational learning capabilities and enabling IT assimilation. In light of these results, the research presented many recommendations for future research and a set of limitations.

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1. Introduction

Firms that operate in today's economy are experiencing increased pressures due to several factors including a rapidly changing business environment, shorter product life cycles, increasingly demanding and less loyal customers with rapidly evolving preferences, and fiercer competition (Sharma et al., 2010). These trends are being driven by an increasingly global economy deregulation in many industries, and fast developments in information technologies that enable new business models and innovative forms of collaboration and competition (Chan et al., 2018). Proactively managing radically changing external environments, organizational capability and technological innovation are crucial to business success. The immense development of technology has brought dramatic changes to business structure (Razavi & Attarnezhad 2013). More specifically, the internet brought a big change to the business world. It has become an important alternative distribution channel for goods and services. Electrical business (e-business) is defined as the procedure of conducting business through the use of the internet and computerized technology. It is an online activity that brings together employees, collaborators, suppliers and customers, whilst having the creation of value as its primary goal (Meditinos et al., 2014). A firm benefits from the internet when they embed e-business capability into their organizational fabric in a way that produces resource complementarity. In this environment, resources can be combined and integrated into unique functionalities that enable distinctive capabilities within a firm, which cannot be substituted for or easily imitated (Tejada-Malaspina & Un Jan, 2019).

* Corresponding author.

E-mail address: m.alshurideh@ju.edu.jo (M. Alshurideh)

Successful exploitation of e-business requires making a creative link between an organization's strategy and the technology that supports it, and managing pervasive information and communication technology applications that are increasingly integrated and convergent, and that enable flexible and adaptive behavior on the part of the firm and its employees (Dubelaar et al., 2005). Moreover, although e-business systems include important technical components, management issues are no less important; they must be addressed regarding changes in organizational processes and interaction both within a firm and among firms (Chan et al., 2018). A firm's ability to conceptualize and manage process innovation, and to increase the learning capacity of its knowledge workers, has thus become a source of competitive advantage (Teece, 2017).

2. The proposed study

Researchers examined that organizational capabilities are playing important roles in successful CRM (Customer-relationship management), ERP (Enterprise resource planning) implementations and they are critical for superior firm performance in e-business (Raman et al., 2006). Moreover, developing organizational learning, knowledge management and IT strategies has been considered an effective and efficient means of successful technological innovation. This perspective has been strengthened by several recent studies (see for example Garrido-Moreno and Padilla-Meléndez, 2011; Matt and Razak, 2011; Maditinos et al., 2014; Tejada-Malaspina and Un Jan, 2019; Al-Marroof et al., 2021). However, empirical studies have seldom addressed the organizational capabilities influencing e-business contribution to firm performance. Also, E-businesses in Jordan have developed significantly in the past few years. As a developing country, Jordan shows readiness for e-businesses compared to other developing countries. The Jordanian e-business infrastructure is strong enough, but still there are some challenges in execution (Yaseen et al., 2016). In addition, most of the studies exploring the relationships between organizational capabilities and e-business implementation are conducted in western countries with little studies undertaken in the Arab world. With the e-business revolution in all over the world many organizations take this opportunity to adapt themselves in order to take the benefits of this business model. It is important for companies to recognize the antecedents to successful e-business implementation to consider the requirements needed in order to do significant changes to existing business processes and substantial investment in information system technology (Alzahrani, 2018). Meanwhile, companies must understand their businesses, their consumers, and the constraints of e-business before implementing it (Shannak and Al-Debei, 2005). Some studies suggest that companies that are exclusively dedicated to understand e-business can be leaders in their markets and even become monopolies, depending on the sector (Anwar and Daniel, 2017; Sanchez-Torres and Juarez-Acosta, 2018). To add more, the literature is scarce on studies of the topic. Related studies have been developed in different directions such as sustainable competitive advantage, greater organizational performance, e-business adoption and strategies, information technology (IT) infrastructure and e-commerce complementarity, e-business competency and capabilities. The literature clearly supports the need for more detailed investigations of how organizational capabilities are associated with e-business implementation, and which factors are associated with successful e-business implementation. This study highlights the importance of a knowledge-based view and a knowledge process-oriented perspective in explaining e-business success and it is motivated by a desire to understand how and what relationships interact in learning, knowledge and IT management processes leading to successful e-business implementation based on available omnidirectional literature.

This study investigates the linkages between organizational capabilities and successful e-business implementation and it is thus conducted to answer the following questions:

- What is the effect of organizational learning capabilities on successful e-business implementation in Jordan?
- What is the effect of knowledge management capabilities on successful e-business implementation in Jordan?
- What is the effect of IT capabilities on successful e-business implementation in Jordan?

3. Literature review

3.1 E-Business

E-business is a new and rapidly evolving way to do business and manage relationships between partners and customers (Oliveira et al., 2016). It involves the use of current and emerging technologies including intranet, extranet, Customer Relationship Management (CRM) tools, public-facing websites, and many others, to share information, improve customer service and experience, facilitate transactions and improve back-office activities, all of which constitute the engine of modern business (Lin & Lin, 2008; Alshurideh et al., 2015; Alshurideh, 2016; Alshurideh, 2019; Alzoubi et al., 2020). Emerging and fast-changing business environments including e-business are heavily dependent on the rationale and characteristics that define them (Triandini et al., 2017). There have been various efforts at defining e-business over the past 20 years; Ash and Burn (2003) introduce the term e-business as a way of performing an organization's key (internal and external) business processes available over the Internet. Hinton and Barnes, (2005) define e-business as the use of Internet-based Information and Communication Technologies (ICTs) to conduct business (including but not limited to information sharing, relationship management and transactional processes) within and between organizations. With the aim of establishing a baseline definition of e-business, Holsapple and Singh (2000) collected representative information from diverse printed/electronic, academic/practitioner sources (including seminal publications) which resulted in the production of a definitional taxonomy comprising five views of e-business: trading, information exchange, activity, effects, and value-chain views. Urbaczewski (2002) mentions

that “online” and “exchange of value” are two essential requisites (elements) that a business must have before it can be classified as an e-business. “Online” indicates that the e-business must use networked, computer-based information technology, and the “exchange of value” demonstrates that the e-business exchanges involve goods, services, information, money, time, and convenience. Accordingly, E-business needs to scrutinize and redefine tried and tested business models to maximize its effect and business value (Lin, 2008). Technologies need careful integration to manage intra- and inter-organizational business processes (Bolat et al., 2016). The implementation of e-business is highly complex and involves potentially wholesale changes in business processes, as well as significant financial investments in areas such as the computing and networking infrastructure and human resource management (Chen and Holsapple, 2012). It often requires multifaceted software that links and manages the information flows within and across organizations, enabling stakeholders to make decisions using data that accurately reflects the current state of their business (Zhu, 2004).

3.2 *E-business implementation success*

Since the introduction of e-business, there have been some fundamental changes in the way that businesses must operate. To remain relevant, companies and organizations have had to adapt with frequent reorganization and restructuring. In some industries entirely new business models have developed offering substantial scope for reforming areas of the business such as supply chain management, transforming traditional value chains and information flows as well as enabling peer production and innovation (Laudon & Traver, 2008; Alzahrani, 2018). Also, E-business implementation involves far more than just the adoption of Information Systems (IS). It involves greater internal and external process integration, closer links with business partners and customers, and managerial and strategic advantages (Ash & Burn, 2003; Souza & Batista, 2017). Another explanation is the extensive scope of performance measurement that includes many different and critical aspects and variables that mediate this relationship and that direct and indirect effects should be analyzed simultaneously (Kmieciak et al., 2012).

It is expected that e-business adoption will result in new forms of immediate value for businesses. Based on that, organizations must identify the critical success factors to realize the full benefits of e-business solutions (Bordonaba-Juste et al., 2012). However, there have been few studies explicitly examining critical success factors for e-business. Rather, most studies implicitly suggest a range of important factors or issues, which may or may not be critical success factors. For example, Huff et al. (2000) emphasize some these success factors as adding value in terms of convenience, information value, disintermediation, price, flexibility; obtaining and using the correct technologies, managing critical perceptions, be able to provide exceptional customer services, becoming effectively connected and obtaining a thorough understanding of the prevailing Internet culture. Additionally, it can be declared that the criticality of strategy and leadership in a successful e-business operation is emphasized in several studies (Athey, 2000; Onetti et al., 2012; Alos-Simo et al., 2017). Organizations need to integrate their human resource practices with their business strategies in order to significantly improve performance and gain competitive advantage (Blount et al., 2005; Hwang et al., 2015). Such integrations can be achieved through measures such as the inclusion of an HRM specialist at executive level; ensuring that line managers have the correct level(s) of HRM responsibility and accountability; and by recognizing the contribution of the HRM function to the development of the business strategy (Chen and Huang, 2009). Therefore, intangible assets such as employee capabilities and competencies are very important to an organization. Moreover, Kumar et al. (2011) state that e-business must be market-oriented in order to succeed in creating and maintaining an organization’s competitive advantage. In fact, market orientation is closely related to the behavior of customers. Constant changes in the social and financial sectors have a significant influence on customer behavior. A system that understands and that can, to a certain extent, predict such changes is a successful component of e-business (Dennis et al., 2009; Teece, 2017). Based on previous explanations, all the factors described in this section have been introduced by various scholars to predict successful e-business implementation.

In summary, this literature review on successful e-business implementation indicates a broad range of issues including security of information and systems, privacy of customer information, stability of systems, cost of operations, metrics for e-business operations and web sites, ease of use, proper presentation of information about goods and services, customer orientation, e-business strategy, both technical and managerial e-business expertise, payment, delivery, competitive price, speed, services, variety of goods and services, web design, marketing, and the trust and loyalty of customers. Even though these studies are analytical and extensive, the currently available literature clearly supports the need for more detailed investigations of organizational capabilities that can influence e-business implementation.

3.2.1 *Organizational capabilities*

Organizational capability is a rather ambiguous concept within the framework of organizational science that has been researched over many years. Organizational capability theory is based on the underlying theoretical frameworks of social-capital (its role in creating intellectual assets) and knowledge integration (its role in creating knowledge synthesis), which are grounded in the theories of the resource-based view and knowledge-based view of the firm (Nielsen, 2018). According to Gold et al. (2001), three main infrastructures; cultural, structural and technological; have the potential to maximize organizational social capital. Companies are heterogeneous and, over time, develop varied organizational procedures and they have ways to do things and address organizational problems that display strong elements of continuity. The fundamental factors of

a firm's performance are its own specific capabilities and assets, as well as its dividing mechanisms (Sungyuan and Ussahawanitchakit, 2015). A firm's specific behavioral patterns are based on its organizational capabilities which evolve gradually over time (Dosi et al., 2000). By assembling resources that work together, companies create their competitive advantage and organizational capabilities (Bharadwaj, 2000). Organizational capabilities do not change rapidly and because they have been developed and applied over extended time frames, they can give a firm its distinctive competitive edge (Dosi et al., 2000). The emphasis is on the accumulation of organizational capabilities and the fact that the future development options are strongly bound to an organization's past experience (Nielsen, 2018). The fact that capabilities are very specific to each firm makes them particularly valuable especially given their tacit nature and difficulty to transfer and to imitate (Schienstock, 2009). Some of the definitions of organization capabilities state that they are "the capacity to deploy its resources to perform a task to improve performance" (Innan and Bititci, 2015), "a process of examining an organization to increase its capacity..." (Harris, 2015), "the ability to perform a coordinated set of tasks, utilizing organizational resources, for achieving a particular end result" (Helfat and Winter, 2011), "the embodied knowledge set that supports competitive advantage" (Gill and Delahaye, 2004), and "the sum of all things that enable an organisations to deliver services" (Rousseva, 2009). Despite the availability of extensive research on organizational capabilities including several taxonomies, the literature review in this paper reveals that a classification highlighting different types of organizational capabilities by their nature and their role in successful implementation of e-business is still absent. Thus, in order to achieve the purpose of the study, three dimensions of organizational capabilities namely organizational learning capabilities; knowledge management capabilities; and IT capabilities, were chosen based on studies of Zhu et al. (2006), Lee et al. (2007), Liu (2013) and Maditinos et al. (2014).

3.2.2 *Organizational learning capabilities*

Previous studies emphasize, theorize and predict that organizational learning will encourage organizations to become more competitive and survive sustainably (Jyothibabu et al., 2011; Tohidi and Jabbari, 2012; Alshurideh et al., 2016; Alshurideh et al., 2017; Oh, 2018; Alshurideh et al., 2019). There are also other empirical studies relating organisational learning to various phenomena such as organizational performance (Senge, 2006) and the readiness to change/adapt (Sudharatna, 2004), business performance (Prieto and Revilla, 2006; Al-Dhuhouri et al., 2020; Nuseir et al., 2021), and customer and employee satisfaction (López et al., 2005; Kurdi et al., 2020; Alkitbi et al., 2020; Al Kurdi et al., 2020). Overall, however, good quality empirical literature on learning outcomes in e-business implementation is very thin on ground.

Hsu and Fang (2008) define organizational learning capability as the ability to adopt and transfer new knowledge and use it to gain competitive advantages and higher production speeds during product development cycles. To add more, organizational learning takes place when an organization identifies and corrects errors in their prevailing behavioral theory and responds to changes in the internal and the external environment (Gukta et al., 2015) with the newly acquired knowledge being registered in the organizational memory (Uğurlu and Kurt, 2016, Lau et al., 2018). Keep in mind that, with there being no absolute consensus in the available research about the number of dimensions of organizational learning capabilities, Onağ (2014) determined a set of distinct dimensions through a literature review (Jerez-Gomez et al., 2005; Alegre & Chiva, 2008) and concluded that organizational learning capability may be operationalized with 11 dimension constructs which are: openness and interaction with the external environment; experimentation, managerial commitment; participative decision making; leadership commitment and empowerment; clarity of purpose and mission; knowledge transfer and integration; teamwork and group-problem solving; dialogue; risk taking; and system perspective. In addition, Templeton's research (2002) suggests just eight elements for organizational learning, namely the management of knowledge growth; social learning; adaptability to environment; the groundwork for the growth of creativity; function evaluation; discussion; awareness; and an organizations' external connection (Templeton et al., 2002). Other studies suggest that organizational learning affects product innovation and leads the organization to innovation efficiency and effectiveness (Calantone, 2002; Lau et al., 2018). Maroofi (2017) stresses that organizational learning is the distinguishing factor in new product development projects as new products are adapted to changing environmental situations, such as uncertainty about customer demand, technological developments and competitive markets.

3.2.3 *Knowledge management capabilities*

While most researchers subscribing to the resource-based view regard knowledge as a generic resource, some researchers such as Tiwana (2000), Evans et al. (2005) and Jeon et al. (2011) suggested that knowledge has unique characteristics that make it the most important and valuable resource of an organization. According to Easterby-Smith and Prieto (2008) the knowledge management view extends from the resource-based view. Evans et al. (2005) pointed out that material resources decrease when used in a firm, whilst knowledge assets increase the more that they are utilized. Knowledge and knowledge management are considered important characteristics of organizational survival, while identifying resources that enable the organizations to recognize, create, transform and distribute knowledge is a key to understanding the achievements and failures of an organization's knowledge management (Oliva et al., 2018). Organizations that manage and transfer knowledge effectively are generally more innovative and perform more effectively (Riege, 2007). Keep in mind that knowledge management focuses on the identification, development and use of knowledge in organizations to help them compete (Alavi & Leidner, 2001). Therefore, the efficient management and use of knowledge is essential for organizations to make full use of the value of knowledge. The attention and importance attached to the acquisition of knowledge management in literature and practice

in recent years is also essential due to changes in the environment, such as increasing global competition, speed of information and knowledge ageing, dynamics of product and process innovations, and competition via buyer markets competition (Greinern et al., 2007). Recently, researchers have begun to explore the role of human factors in the management of knowledge (Chin-Loy and Mujtaba, 2011; Tejada-Malaspina and Un Jan, 2019). Previously, Alavi and Leidner (2001) had identified culture as an important factor in how organizations manage their knowledge. Riege (2005) attributed knowledge management failure to the organizational structure, and Gold et al. (2001) pointed out that the failure to consider organizational capabilities is very often an important reason for the failure of organizational knowledge management.

3.2.4 IT capabilities

A firm's performance can be explained by how effective it is in leveraging IT to support and enhance its core competencies (Alos-Simo et al., 2017). Accordingly, IT capabilities have been operationalized and examined for their effect on competitive advantage (Ravichandran & Lertwongsatien, 2005; Alos-Simo et al., 2017), performance enhancement (Liu et al., 2013, Chae et al., 2014), implementing a firm's strategy (Yeh et al., 2012), creating complementarity and values with other capabilities and enhancing the efficiency within a firm (Zhu et al., 2004; Liang et al., 2007). IT capabilities were also discussed and examined in the context of the implementation of e-business models (Weil et al., 2002), business agility (Ashrafi et al., 2006; Overby et al., 2006), and e-commerce capability and effectiveness (DeLone & McLean, 2004). Organizational IT capabilities can be defined as complicated groups of IT-related resources, skills and collective knowledge, exercised through business processes that enable a company to coordinate its activities (Stoel & Muhanna, 2009). Another perspective describes IT capability as an overarching structure capable of managing IT resources such as infrastructure and infrastructure quality, human, operational, objects and knowledge, business expertise, and the relationship between IT and the business (Bharadwaj, 2000; Tippins & Sohi 2003; Xu & Kim, 2014). Several studies examined the impact of IT capabilities and discuss the situational conditions that impact on the e-business process and the value creation whilst examining a firm's internal characteristics (Sanders, 2007; Chen & Tsou, 2012; Filho & Moori, 2018). In this context, Wang and Shi (2011), discuss the external conditions shaped by the different entities, such as suppliers, customers, and competitors that facilitate e-business implementation. Devaraj et al. (2007) mention that in e-business, IT capabilities can facilitate more effective coordination with suppliers, resulting in a reduction of lead-time. Others have, however, suggested that the organizational ability derived from IT implementation to support e-business is uncertain and it is highly dependent on situational conditions (Iyer et al., 2009). Thus, previous empirical studies report mixed findings about the effects of IT capabilities on e-commerce and e-business processes and outcomes. The role and articulation of the underlying mechanisms through which IT capabilities can improve a firm's performance remain unclear. As such, there is a greater requirement for more empirical studies on the influential mechanisms of IT capabilities especially in relation to the implementation of e-business and its performance context.

4. Theoretical framework and research model

The research model of the present study is based on the organizational capabilities' theory, the resource and knowledge-based theories and IT implementation literature (Wu et al., 2011; Lin and lee, 2005; Jeon et al., 2006; Lee et al., 2007; Huang et al., 2008; Chang, 2009; Maditinos et al., 2014). The dependent variable in the created model is successful e-business implementation, which is the variable of primary interest. The independent variables are three organizational learning capabilities, knowledge management capabilities and IT capabilities. As conceptualized in this study, the organizational learning capabilities, knowledge management capabilities and IT capabilities were modeled as multidimensional, second-order constructs (Jarvis et al., 2003), that have formative relationship with the first-order dimensions, which are: training availability, technical expertise, knowledge level, knowledge acquisition, knowledge application, knowledge sharing, IT infrastructure and IT assimilation. Multidimensional constructs have more than one dimension, and the latter ones can be reflective or formative (Meditinos et al., 2014). The reason behind the modeling of the study is based on review of organizational capabilities literature, which shows that several distinct organizational capabilities dimensions exist and for each dimension there are a number of sub-dimensions describing a different facet of the sub-dimension. Hence, three dimensions of organizational capabilities (namely, organizational learning capabilities, knowledge management capabilities and IT capabilities) were proposed to examine in the study, each of which includes a different set of sub-dimensions (namely, training availability, technical expertise, knowledge level, knowledge acquisition, knowledge application, knowledge sharing, IT infrastructure and IT assimilation). MacKenzie et al. (2011) and Duarte and Amaro (2018) suggest if the dimensions of multidimensional construct are defining the construct, and a change in only one of the dimensions can cause a change in a focal construct, they should be modeled as formative indicators of the second-order focal constructs. Hence, Figure (1) shows the research model, which hypothesized organizational learning capabilities', knowledge management capabilities' and IT capabilities' impact on e-business successful implementation.

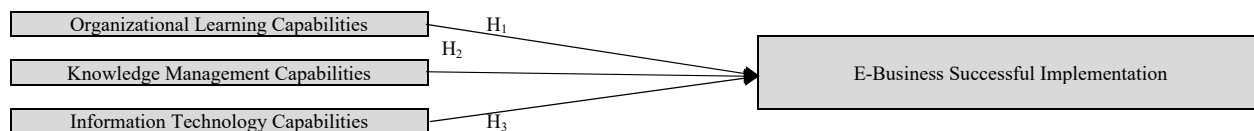


Fig. 1. Research Model

5. The study hypotheses

5.1 First hypothesis

Aragon et al. (2014) argued that learning is pre-eminent over other resources or capabilities, because it enables firms to maintain long-term competitive advantages by continuously improving market information processing activities at a faster rate than rivals do. Despite the pervasiveness of IT in modern workplaces, there is growing evidence of failure to fully realize organizational effectiveness due to poor employee acceptance of new technologies (Delaney and D'Agostino, 2015). People nowadays cannot solely rely on their existing educational level: the continuous and rapid development of the internet and technology in general, forces employees to be constantly educated and acquire new knowledge related to their operational tasks (Godoe and Johansen, 2012; Oh, 2018). Based on the above explanation, the effect of organizational learning capabilities on successful e-business implementation can be drawn as:

H₁: *There is a positive impact of organizational learning capabilities on successful e-business implementation.*

5.2 Second hypothesis

Moodley (2003) indicated that e-business infrastructure involves not only e-commerce initiatives but also is driven by acquisition knowledge and skills. According to Dehghani and Akhavan (2017) e-business development requires concerted effort and experience in recognizing and capturing new knowledge. Organizations generally have to acquire the know-what, know-how and know-why to assimilate any complex technology successfully (Lee et al., 2007; Oliva et al., 2018). Know-what is factual knowledge about a technological innovation and its features, know-how is knowledge about how to apply a technological innovation in an organization, and know-why is knowledge required to meaningfully measure the cost, benefits and risks of applying a technological innovation (Ravichandran, 2005). Based on the above explanation, the effect of knowledge management capabilities on successful e-business implementation can be drawn as:

H₂: *There is a positive impact of knowledge management capabilities on successful e-business implementation.*

5.3 Third hypothesis

IT capability becomes a valuable asset for an organization in sustaining competitive advantages in the marketplace, especially between e-businesses (Alzahrani, 2018; Chan et al., 2018; Bhatt & Grover et al., 2005). IT capabilities enable IT staff to develop, diffuse, and support various system components quickly, to react to changing business conditions and corporate strategies such as mergers, acquisitions, strategic alliances, global partnerships, or economic pressures (Liang, 2009; Yeh et al., 2012). To add more, IT capabilities are able to empower the development of a common system that links business functions and enables their synergistic engagement (Bharadwaj, 2000). These capabilities also enable strategic innovations in business processes by allowing development of necessary applications, facilitating information sharing across e-business units, and making it easy to develop common systems integrating various organizational functions (Byrd & Turner, 2001). And finally, IT capabilities ensure that the firm pays strong attention to IT applications when making strategy decisions on Enterprise Resource Planning (ERP), interorganizational collaborations, customer relationship management (CRM) and supply chain integration (SCM) (Liu et al., 2013) which are parts of business process with the upstream and downstream partners and are facilitated by e-business implementation (Wang & Shi, 2017). Based on the above explanation, the effect of IT capabilities on successful e-business implementation can be drawn as:

H₃: *There is a positive impact of IT capabilities on successful e-business implementation.*

6. Methodology

6.1 Population and sample

Testing the hypotheses developed to answer the research question requires the collection of data from individuals specific to the research undertaken. It may be possible on certain occasions to collect data from every possible individual; however, in many cases this is impossible due to restrictions of time, money, and access (Saunders et al., 2016). Furthermore, the study can be severely harmed if the population is incorrectly chosen. Therefore, it is proposed that data should be collected from the people, events, or objects that can provide the correct answer to the problem and who are considered representatives of the population (Sekaran & Bougie, 2016). The proposed conceptual framework of the study was tested with the use of a structured questionnaire on a non-probability sample of 16 biggest Jordanian companies that have online involvement. According to JIC (Jordan Insurance Company, 2016), these companies were announced as leading companies in Jordan in a variety of sectors based on the below selection criteria; staff turnover, pay scale, benefits: health, family, time off, office environment, opportunity for growth, market credibility/reputation, communication with departments, physical workplace, employee training and skills development and community involvement. This study population consists of employees in IT departments, operation managers, IT executives or other upper level managers and officers, who possess sufficient knowledge

of their organizations, because of their relation to the subject and their extensive knowledge of e-business processes in their companies. Therefore, the judgmental sampling method suggested by Sekaran and Bougie (2016) was used as it represents the most suitable sampling method, given that it involves choosing subjects who are in the best position to provide with the required information, as only a limited number of people possess the information that is sought. The researchers were able to distribute 300 questionnaires to the available locations where it was possible to get the approval without taking into account the size of the company. The number of questionnaires varied according to the company's structural, policy and privacy concerns. The number of retrieved data was 263 out of a total 300 questionnaire representing 87.7% of the total number of questionnaires distributed.

6.2 Data collection methods

The primary data was derived from the development of a questionnaire to measure the constructs and study hypotheses. The questionnaire of this study is divided into 5 parts, beginning with a section regarding the personal data of the respondents and moving on to four sections, namely; organizational learning capabilities, knowledge management capabilities, IT capabilities and e-business implementation as shown in Table 1.

Table 1
Number of Items for the Study Variables

Second-order construct	constrain	First-order construct	constrain	Number of items	Adapted from
Organizational Learning Capabilities		Training availability		2	Bradford and Florin (2003)
		Technical expertise		2	Lee et al. (2007)
		Knowledge level		3	Lee et al. (2007)
Knowledge Management Capabilities		Knowledge acquisition		4	Gold et al. (2001)
		Knowledge application		5	Gold et al. (2001)
		Knowledge sharing		4	Gold et al. (2001)
IT Capabilities		IT infrastructure		5	Liu (2013)
		IT assimilation		5	Liu (2013)
Business Implementation Success		Business implementation success		9	Zhu et al. (2006)
Total				39	

Nine-item measures were used to assess the only dependent factor of the present study (e-business successful implementation), indicated by improved coordination with suppliers, decreased procurement and inventory costs, internal processes efficiency, employee productivity, operational costs, increased sales, widened sales area and improved customer adapted from Zhu et al. (2006). These items stand for impact on upstream coordination, internal operations and on downstream sales. For all perceptual measures a five-point Likert type scales were employed, typically anchored by 1–strongly disagree and 5–strongly agree. In the following section, the techniques used to test the hypotheses that were developed for this study will be discussed.

6.3 Data analysis techniques

In order to investigate the hypotheses developed for this study, the collected data was used to examine the impact of organizational capabilities on e-business successful implementation. A number of statistical techniques were used to analyze the data by using Partial Least Squares (PLS) and Statistical Package for Social Sciences (SPSS). Also, the structural model of the study was tested, in addition to descriptive statistics that had provided a background of the respondents of the study and included frequencies and percentages. In order to describe the study main variables, the mean, the standard deviation and the level of importance were used. To ensure the normal distribution of the population and to test the relationships between the independent variables of the study, also, normality and multicollinearity tests were conducted. Based on the identification of the study population and the sample and the collection of the information according to the methods described in the chapter, the results obtained from the analysis assisted in accepting or rejecting the hypotheses and in answering the study's research questions in order to determine the findings and conclusions of the study in the last section.

6.4 Validity and Reliability

A crucial step in any research is to make sure that the instrument used to measure the study variables does in fact measure the intended concepts and does so accurately (Aldosary et al., 2018). Therefore, in this section, the goodness of measures developed was tested by determining the validity and the reliability of the measures. Validity questions whether the right concept was measured; meanwhile reliability stands for stability and consistency of the measurement (Bryman & Bell, 2015). Face validity was tested by conducting a pilot test and distributing the questionnaire to a group of respondents (from the study population) who are not included in the study sample to answer the study questions. The researchers carried out the appropriate test for the study and found that there is an internal consistency and stability among the study questions. Also, the confirmatory factor analysis (CFA) was conducted in order to explore the convergent and discriminant validity of the construct of questionnaire and the contrast reliability of the study constructs was taken under consideration. Hence, composite reliability, Average variance extracted (AVE), Cronbach Alpha and standardized factor loading values were examined (See Table 2). As it shown in Table (2), the value for composite reliability for all dimensions of the study is greater than the minimum acceptable value, which is 0.6 (Hair et al., 2017; Aldosary et al., 2018) Also, all values of Cronbach Alpha, which stands for the reliability

of the study, are above the cut-off point (0.6); this indicates the existence consistency among the questions of the study which, in its turn, confirms the stability of the study tool (Hair et al., 2017).

Table 2
Measurement model

	AVE	Composite Reliability	Cronbach's Alpha	Standardized Factor Loading
Training Availability	0.8361	0.9107	0.8043	0.699
Technical Expertise	0.7813	0.9072	0.7201	0.611
Knowledge Level	0.8611	0.9491	0.9193	0.741
Knowledge Acquisition	0.7513	0.9235	0.8892	0.564
Knowledge Application	0.7195	0.9276	0.9022	0.557
Knowledge Sharing	0.7918	0.9383	0.9122	0.626
IT Infrastructure	0.7438	0.9355	0.9135	0.553
IT Assimilation	0.8737	0.9719	0.9638	0.763
E-business successful implementation				0.622

Convergent validity measures the degree to which multiple attempts to measure the same concept are in agreement. It was assessed by considering the factor loading per construct and composite reliability. Hence, the items of factor loadings are significant (above 0.5) and all values for composite reliability are above 0.9, which are all well above the recommended (0.7) threshold Hair et al., (2017). Finally, all constructs of the study have AVE values above 0.7, so that it is adequate for convergent validity, and besides, there is an evidence indicating that there is discriminant validity. Hence, Table 3 declares a conclusive proof of the fact.

Table 3
Discriminant validity

	1	2	3	4	5	6	7	8	9
1 E-business successful implementation	0.9144								
2 IT Assimilation	0.7278	0.8839							
3 IT Infrastructure	0.6752	0.6774	0.9279						
4 Knowledge Sharing	0.7564	0.7213	0.8084	0.8667					
5 Knowledge Application	0.7721	0.5917	0.6474	0.6671	0.8482				
6 Knowledge Acquisition	0.7665	0.7558	0.8482	0.8223	0.8278	0.8898			
7 Knowledge Level	0.7281	0.7275	0.7998	0.7748	0.8212	0.6657	0.8624		
8 Technical Expertise	0.6646	0.5687	0.5559	0.6502	0.6524	0.7174	0.6561	0.9347	
9 Training Availability	0.6017	0.5319	0.6086	0.6058	0.7029	0.6159	0.5787	0.6293	0.8880

Discriminant validity is the degree to which the measures of different concepts are distinct. Discriminant validity is examined by comparing the squared correlations between constructs and variance extracted for a construct (Aldosary et al., 2018). The analysis results showed that the square correlations for each construct is less than the variance extracted by the indicators measuring that construct, as shown in Table 4, indicating the measure has adequately discriminant validity. (Approach by Lee et al., 2006). Table 4 declares a conclusive proof of the significant path from the second-order construct to the first-order dimensions. Furthermore, the value of the composite reliability test shows a high magnitude of significance; above the suggested cut-off of 0.7 (Hair et al., 2017). Thus, on both theoretical and empirical grounds, the conceptualization of three dimensions of the study; learning organizational capabilities, knowledge management capabilities and IT capabilities, as higher-order, multidimensional constructs are justified. In summary, the measurement model demonstrated adequate reliability, convergent validity and discriminant validity.

Table 4
Second order constructs

Second order Construct	First order construct	Standardized Factor Loading	T value	Composite Reliability
Learning Organizational Capabilities	Training Availability	0.699	32.438	0.9124
	Technical Expertise	0.611	21.874	
	Knowledge Level	0.741	29.359	
Knowledge Management Capabilities	Knowledge Acquisition	0.564	39.881	0.9298
	Knowledge Application	0.557	55.133	
	Knowledge Sharing	0.626	39.013	
IT Capabilities	IT Infrastructure	0.553	45.433	0.9537
	IT Assimilation	0.763	38.525	

6.5 Demographic characteristics and descriptive statistics

The respondents of this study were asked to provide information regarding their gender, age, educational level, length of service and industry type. Fig. 2 presents the demographic information about gender, age and education of respondents with the frequency, the percentage representing the number of respondents belonging to each group. Table 5 shows that the number of males reached 175, which represents 66.5% and 88 females, which represents 33.5%. This can indicate that these companies tend to employ males more than females for higher positions.

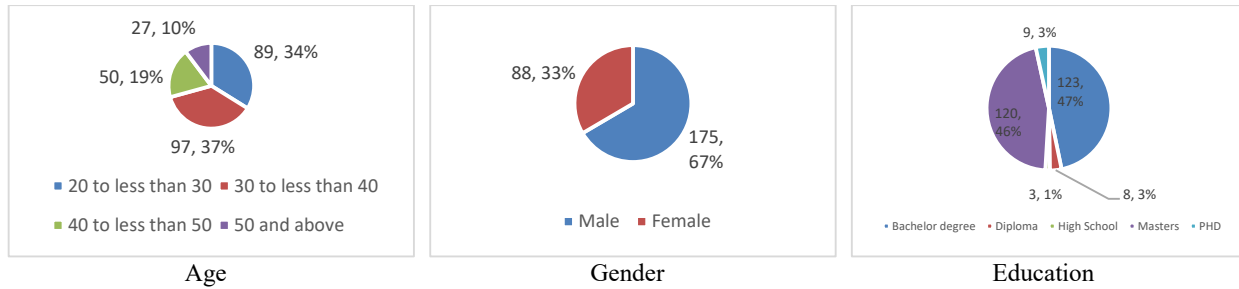


Fig. 2. Demographic information- Gender, Age, Education

With regards to age, the majority of the respondents (36.9%) belong to the age group of above 30 and less than 40 years old, followed by (33.8%) belonging to the age group of 20 to less than 30, (19%) between 40 and less than 50, (10.3%) of them are older than 50 years. The results showed that there is a relative fair mix of age groups in the study sample. In view of the academic qualifications, the percentage of Bachelors’ and Masters’ degree holders is almost equal (46.8% and 45.6%). These results indicate that in order to be employed in a bank the basic educational requirement is a bachelor’s degree with some exception for lower degrees. Pursuing higher education is not mandatory in banks, but employees are encouraged to pursue further education. The study sample includes some holdings which are doing different types of businesses and activities in different industries, so a questionnaire section about industry types was added in order to have the most accurate information about the sample of the study. Fig. 3 presents the demographic information about length of service and industry of respondents with the frequency, the percentage representing the number of respondents belonging to each group. According to the results banking, insurance, and healthcare sectors were the majority. In terms of work experience, the table shows evidence of high standards: 31.9% of 5 to 10 years’ experience and 26.6% of 10 years and above of working experience. It is clear that a large percentage of the respondents have substantial experience in their field indicating that the work environment and benefits provided by the organizations result in high retention levels.

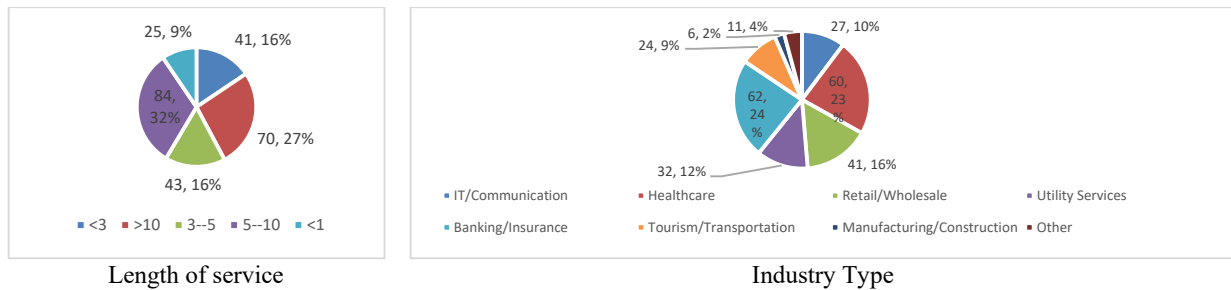


Fig. 3. Demographic information- Length of service and Industry

6.6 Test of Normality

Test of the normal distribution is to ensure that the sample of the study is representative of the population; it means it is possible to generalize the results of the sample of the study sample to the study population. Skewness and kurtosis tests are widely used to measure normality. Skewness is used to describe the distribution’s balance, with unbalanced distributions being either negatively (left) or positively (right) skewed (Bryman & Bell, 2015). Kurtosis refers to the degree of distribution flatness or peakedness (Hair et al., 2017). The acceptable values for skewness and kurtosis range between -1 and +1 and -7 and +7 accordingly, to ensure that data is distributed normally (Hair et al., 2017). Table 5 indicates that the data is normally distributed.

Table 5 Normality Test

Variable Name	Skewness	SE of Skewness	Kurtosis	SE of Kurtosis
Training availability	-0.422	0.150	-0.535	0.299
Technical Expertise	-0.534	0.150	-0.020	0.299
Knowledge level	-0.349	0.150	-0.695	0.299
Knowledge acquisition	-0.612	0.150	-0.116	0.299
Knowledge application	-0.531	0.150	-0.118	0.299
Knowledge sharing	-0.339	0.150	-0.446	0.299
IT Infrastructure	-0.564	0.150	-0.064	0.299
IT Assimilation	-0.306	0.150	-0.578	0.299
E-Business Successful Implementation	-0.374	0.150	-0.505	0.299

6.7 Multicollinearity diagnostics

Multicollinearity indicates whether two or more independent variables are strongly correlated or not. Multicollinearity is thus a data problem which may cause serious difficulty with the reliability of the estimates of the model parameters; high levels of multicollinearity increase the probability that a good predictor of the outcome will be found non-significant and rejected from the model (Hair et al., 2017; Alin, 2010). The commonly used measures to test multicollinearity are the tolerance value and the variance inflation factor (VIF) (Sekaran & Bougie, 2016). The tolerance value should range from 0 to 1 and multicollinearity appears if the tolerance value is 0.01 or less. Further, the VIF should be less than 5 to ensure no multicollinearity does present (Bryman & Bell, 2015). Table 6 indicates the fact that no multicollinearity issues were found among the constructs of the study.

Table 6
Collinearity Statistics and VIF

Model	Collinearity Statistics	
	Tolerance	VIF
Training availability	0.415	2.408
Technical expertise	0.471	2.121
Knowledge level	0.369	2.707
Knowledge acquisition	0.236	4.228
Knowledge application	0.235	4.851
Knowledge sharing	0.252	3.973
IT infrastructure	0.222	4.508
IT assimilation	0.337	2.972

7. Hypotheses testing and discussion

Hypothesis testing determines whether a particular hypothesis is a reasonable statement or not. In the study there are three main hypotheses which are:

H₁: *There is a positive impact of organizational learning capabilities on successful e-business implementation.*

H₂: *There is a positive impact of knowledge management capabilities on successful e-business implementation.*

H₃: *There is a positive impact of IT capabilities on successful e-business implementation.*

The value of coefficient of determination (R^2), the beta, t-statistic and the sig. (which is known as p-value) were calculated. The value of multiple correlation coefficient (R) is 0.732, which indicates a strong positive relationship between organizational capabilities and e-business successful implementation. R^2 , coefficient of determination indicates the change in the dependent variable caused by the change in independent variables. Thus, these organizational capabilities account for 73.2 % of the variance of the e-business successful implementation. The adjusted R^2 indicates the generalizability of the model. It allows generalizing the results taken from the respondents to the whole population. Additionally, the results of the study give a rough indication of the contribution of each predictor variable (See Fig. 4). As it is shown in the figure, organizational learning capabilities and IT capabilities have positive and significant paths ($p < 0.01$) leading to e-business implementation success. The organizational learning capabilities have the most contribution to e-business implementation success with a β value of 0.468 which indicates that it is a strong predictor of e-business successful implementation. To add more, a large absolute t-value (8.55 and 6.80 accordingly, higher than 1.96 in both cases) and small p-value shows that the predictor variable has contribution to the criterion variable. Along with this, no statistical support was found for the significant impact of the knowledge management capabilities on e-business successful implementation. Hence, H_1 and H_3 were rejected and H_2 was accepted. In addition, the results of the testing hypothesis of the study revealed that learning organizational capabilities and IT capabilities have a significant impact on e-business implementation success. Thus, it can be concluded that there is a tendency for high levels of success in e-businesses to be associated with a strengthening of organizational learning and IT capabilities. This finding confirms the findings obtained in other studies, where organizational capabilities were found to be related to e-business success (Bharadwaj, 2000; Ravichandran, 2005; Zhu et al., 2006; Lee et al., 2007; Lin & Lin, 2008; Yeh et al., 2012; Liu, 2013; Maditinos et al., 2014; Wang & Shi, 2017).

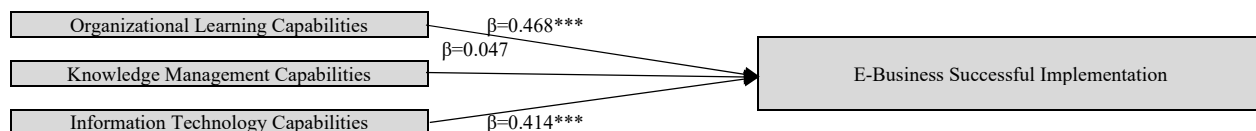


Fig. 4. Hypotheses of the study

Note: *** $p < 0.01$

The premise behind this finding may relate to the fact that firms that provide e-business training and knowledge are more likely to realize the potential e-business contribution to firm performance. Owing to the inherent complexity of e-business systems, teaching, training and knowledge sharing methods must enable employees to scale initial hurdles to acceptance and usage, realizing more from e-business. Moreover, the strategic value of IT capabilities is associated with its ability to allow a

firm to adapt successfully to changes in the external environment. Also, achieving success in processes through IT capabilities, as we found in this study, is also supported by previous studies (Kim et al., 2011; Chen and Tsou, 2012; Chen et al., 2014). The improvement in business processes is justified by the direct use of IT at this organizational level, both in processes considered strategic, as well as at tactical or operational level (Oliveira et al., 2016).

An interpretation for not finding any statistical support for the significant impact of the knowledge management capabilities on e-business successful implementation can be based on Hofstede's cultural dimensions theory (Hofstede, 2015), as Alavi and Leidner (2001) had identified culture as an important factor in how organizations manage their knowledge. Moreover, Hofstede's cultural dimensions theory has been widely used in several fields as a paradigm for research, particularly in cross-cultural psychology, international management, and cross-cultural communication. This framework for cross-cultural communication, describes the effects of a society's culture on the values of its members, and how these values relate to behavior, using a structure derived from factor analysis (Easterby-Smith, 2008).

The theory proposed six dimensions along which cultural values could be analyzed: individualism-collectivism; uncertainty avoidance; power distance (strength of social hierarchy) and masculinity-femininity (task-orientation versus person-orientation), long-term orientation and indulgence versus self-restraint (Hofstede, 2015). Based on that, long-term orientation versus short-term orientation associates the connection of the past with the current and future actions and challenges. A lower degree of this index (16 out of 100 for Jordan) indicates that traditions are honored and kept, while steadfastness is valued, while societies with a high degree in this index view adaptation and circumstantial, pragmatic problem-solving as a necessity. A poor country that is short-term oriented usually has little to no economic development, while long-term oriented countries continue to develop to a point (Hofstede, 2015). High long-term orientation scores are typically found in East Asia, with China having, Hong Kong and Japan. They are moderate in Eastern and Western Europe and low in the Anglo countries, the Muslim world, Africa and in Latin America (Hofstede, 2015). In light of above stated facts, it is worthy to mention that the previous studies that came up with the results of finding relationship between knowledge management capabilities and e-business implementation success were conducted in Asian countries and Europe. Moreover, it is well known that Arabic business etiquette is formal and conservative, as Arab countries value order, rules and tradition, and Jordan is a part of this world. Hence, the result derived from the study concerning knowledge management capabilities can be interpreted from cultural context perspectives (Ourfali, 2015, Beugelsdijk & Welzel, 2018).

In order to understand the practical value of research addressing e-businesses, combined with the limited published research regarding this topic in Jordan, the current study aimed to investigate the impact of organizational three capabilities on e-business successful implementation. Based on literature review a model was developed, and the data required for this study were collected from employees working in the most successful companies operating in the Jordanian market from different industries. In the previous chapter, the results based on specific analyses were presented. Based on the results one out of three hypotheses were rejected.

8. Review of main findings

E-business is causing organizational transformation and building competitive advantage in case the implementation process is well understood and utilized within the organization. The results of previously conducted studies confirm that successful e-business implementation is expected to understand the importance of organizational capabilities and their role in business success. The statistical analysis of the study examined this fact among organizational learning capabilities, knowledge management capabilities and IT capabilities. In addition, according to the results of the study, organizational learning capabilities seemed to be the first to give attention and come up with improvement for e-business implementing companies. These findings are in line with previous research that proposed the importance of the learning organizational capabilities and practices in e-businesses and e-business implementation processes, suggesting that the organizations must be always learning, and the employees have to be constantly trained to acquire knowledge and new skills in order to be capable of prosperously accomplishing their responsibilities causing a better organizational performance (Maditinos et al., 2014; Zhu et al., 2006; Lee et al., 2007; Gold et al., 2001). E-business can create value in case resources and capabilities are able to complement each other and generate synergies. Consequently, an adequate level of training availability, technical capability and e-business knowledge taken together facilitate successful e-business implementation and performance.

Furthermore, IT capabilities were found to have a statistically significant impact on e-business implementation success, which emphasize the technological consideration from both IT infrastructure and IT human capital perspectives. The organization who wishes to exploit e-business investment should pay attention to both social and technical components and their interaction within and beyond the organization simultaneously, instead of focusing exclusively on one of them. These two together create added value and enable firms to conduct electronic transactions with any business partners along the value chain, and creates opportunities for companies to establish interactive and connective relationships along the value chain; with partners, customers and other stakeholders, directly extending the reach of organization (Lee et al., 2007). To add more, the study failed to find a statistically significant impact of knowledge management capabilities on successful e-business implementation, and in chapter 4 it was interpreted from the perspectives of cultural differences (see the section Hypothesis testing and discussion). Therefore further research and different approaches regarding the results dimension of knowledge management capabilities

might be needed. The outcomes of the present study point out e-business functional capability within and beyond the organizational framework. Organizations must build strong organizational competences not solely focusing on technological considerations. With respect to that direction, aspects of organizational learning and IT assimilation should be taken under consideration regarding the successful implementation of e-business principles. In sum, organizations should bear in mind that focusing on technology is not enough for a critical success factor in e-business implementation. Human factor (human capital) has an important role in successfully transforming every company into a modern digital organization, and the best scenario is when this factor is supported with the technology. Otherwise, the technology may be there, but employees and their capabilities to exploit the technology, which is in charge of revealing and representing the advantages of the organization and establishing the competitive position for the company, may be absent.

9. Contribution of the research

In the study a theoretical framework was developed in order to test the impact of organizational capabilities on e-business implementation success, thereby extending prior organizational capabilities, IT adoption and e-business research. Despite the fact that this study was conducted based on existing literature, each of the previous researches was done in a different country with different settings, where e-businesses understood and organized differently according to their cultures. The model of the study was formed on the synthesis of antecedent researches and particularly three organizational capabilities were chosen to reveal their impact on e-business implementation. Meanwhile, to the best of our knowledge, most of the research in the extant literature focused on different organizational capabilities, but not on these three simultaneously, and, moreover, no studies were found to be discussing IT capabilities with any of the other two dimensions in the same context. Also, traditionally, researchers have been examining different organizational capabilities as first-order constructs, while as conceptualized in this study, the organizational learning capabilities, knowledge management capabilities and IT capabilities were modelled as multidimensional, second-order constructs, that have formative relationship with the first-order dimensions to fully represent the multiple facets of these variables, as it is recommended by MacKenzie et al. (2011) and Duarte and Amaro (2018). Hence, the current study demonstrates an attempt to combine in order to increase the explanatory power of previously done research. Therefore, this study contributes to enabling others to understand the relationship among organizational capabilities and e-business implementation in Jordanian market since limited efforts have been undertaken to examine this topic in this particular country.

10. Recommendations and implications of the findings

In line with the highly mentioned conclusions of this research, the study highlights some important implications for managers and CEOs of the organizations who are initiating or currently conducting e-business applications. It has also implications for e-business policy-makers in formulating policies and targeting appropriate organizational capabilities to ensure effective e-business implementation. The outputs of this study may help in predicting the determinants of firm decision of adaptation e-business systems. All above mentioned practitioners can make use of the results of the study to achieve effectiveness and success in e-businesses, first, by understanding how organizational components form organizational advantages and, second, by building organizational culture that enables to exploit organizational capabilities and create synergies. The study suggests that the organizations should create an organizational culture that focuses on human resources and human capital and understand the needs of employees in order to support building of these required organizational capabilities. Hence, development of organizational learning and IT strategies can be useful for e-business success and it can lead to a better organizational performance. An organization needs a well-designed IT infrastructure to create and maintain the organizational knowledge deriving from organizational learning capabilities and enabling IT assimilation. Hence, firms with enhanced and accurate leveraging of the strategic relevance of learning and applying practices are more likely to achieve e-business contribution to firm performance (Lee et al., 2007). Also, managers and decision makers in the organizations can implement incentive systems encouraging organizational learning and IT capabilities by making sure that all internal and external barriers for their implementation have been successfully removed. If applied successfully, the results will be directly reflected on the outcomes of the organization and on its performance significantly improving e-business implementation success.

11. Limitations of the study and future research

Although the findings of this study are of a great significance for researchers, CEOs, decision makers and managers for further implications, certain limitations do exist. First, some difficulties were faced during the study data collection stage, as the companies were from different industries, sizes and had different policies of privacy. Second, the population and the sample size; the study was based on a sample of 263 respondents. In case of a larger population and a sample the model would have a greater statistical power. Third, the research model provides the picture of e-business implementation in Jordan. Future studies should test the applicability of the results of this study in different cultural contexts. Fourth, this study employed judgement sampling in order to obtain a sample of the most qualified people that are able to provide appropriate information. However, using judgement sampling reduces the generalizability of the results to the population. Thus, future researchers are recommended, if it is possible, to use other sampling techniques in an effort to improve the efficiency of the sampling design.

And, finally, this study did not discuss all organizational capabilities but it tested only three capabilities: organizational learning capabilities, knowledge management capabilities and IT capabilities. Future studies might include more organizational capabilities.

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