

The Role of Digitalization in Achieving Sustainable Competitive Advantage: A Study on Telecommunication Sector in Egypt

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Abstract

The objective of the research is to examine the influence of Sustainable Competitive Advantage (SCA). The research population consists of all employees at Telecommunication sector in Egypt. The researcher has adopted a sampling method to collect data for the study. The appropriate statistical methods such as Alpha Correlation Coefficient (ACC), Confirmatory Factor Analysis (CFA), Multiple Regression Analysis (MRA), are used to analyze the data and test the hypotheses.

The research has reached a number of results, the most important of which are (1) the study shows the importance of hardware, software, databases, communication networks and others, which is reflected in the organizational performance of companies operating in this sector, (2) despite the existence of communication networks, devices, equipment and others, the level of use of information technology did not achieve the required level, and perhaps this is due to the weak experiences and capabilities of employees in this field, (3) the current study showed that information technology plays an important role in reducing the time taken between customer contact and the delivery of the product that meets his needs and desires, (4) communication networks can work more efficiently and effectively than they do now, and this can be achieved through contacting customers and exchanging information among them, (5) there is a statistically significant relationship between the dimensions of digitization and competitive advantage (6) the digitization of organizations is essential in the current stage, as it provides great opportunities for both organizations and societies, (7) digitization is an important topic due to its positive impact on organizational restructuring, formal and informal structures, and business model innovation.

The study referred to a number of recommendations, the most important of which are (1) the need for organizations to apply information technology and its role in improving the quality of service provided on the one hand, and achieving competitive advantage on the other hand. This is in addition to achieving employee and customer satisfaction, and achieving profits, which ultimately leads to enhancing the organization's marketing position, (2) the need to create the regulatory environment for the development of the digitization system, in terms of training employees, re-engineering operations, and making fundamental changes in the organization's work mechanism, forming a department to prepare and implement the digitization system in line with the nature of work in the organization, (3) the formation of the digitization system through three basic components, which are (1) the system inputs represented in the data processing system, the specialized research and studies system, the data collection system, the financial transactions of the organization, and the economic, social, technological and legal environment surrounding the organization, (2) the raw material transfer processes for useful outputs, (3) reports and graphs that reflect the output of the operation of the previous stage, (4) feedback, through which deficiencies or weaknesses in the previous stages are identified in order to correct them, (5) nonprofit decision makers must understand the opportunities and challenges posed by digitalization in order to allow them to formulate a digitalization strategy, which can lead to competitive advantages and digital communication with stakeholders.

Keywords: Role of Digitalization, Sustainable Competitive Advantage, Telecommunication Sector

1. Introduction

Digitization is concerned with how technology used within an organization and helps improve the services provided to customers. Digitization is also based on employing technology in an optimal manner, in a manner that serves the workflow within the organization, and in its dealings with customers, in order to facilitate access to services in a manner that ensures saving time and effort (Ivarsson, & Svahn, 2020).

The issue of digitization is one of the most prominent modern administrative concepts that have emerged during the past few years due to the increasing interest in information. It has been associated with the emergence of the knowledge economy, and the tremendous development of information and communication technology (Chaniasa, 2019).

In light of the increased competition, the speed of technological development, and the high level of inflation in the countries of the world, this has led organizations to search for opportunities in developing countries that were not affected by the financial crisis due to their digital backwardness. Hence the importance of digital transformation is that it provides protection from external threats, take advantage of available opportunities, and adapt to new rules in internal and external markets (Chaniasa, 2019).

Entrepreneurial organizations seek to achieve competitive advantage by providing a technological structure capable of supporting the different needs of customers, enhancing communication with them, as well as trying to attract new customers (Tarhini & Kassar, 2018).

Digitally oriented organizations tend to adopt digital initiatives and achieve distinct levels of creativity and innovation, as they have a vision and a great commitment to using advanced technologies to provide innovative products and services, and improve the performance of their operations (Wroblewski et al., 2018).

Organizations with strong technology knowledge have the ability to realize entrepreneurial projects that help them achieve distinct levels of profitability and exploit opportunities. Technology acquisitions also provide opportunities to exploit recent innovations by spreading knowledge and technology, reaching customers, and reducing costs through reliance on big data, cloud computing, and artificial intelligence applications (Urbinati et al., 2017).

The business environment has become more complex due to the increased intensity of competition, and the rapid development of technology has led to changes in the production pattern, and thus business organizations have realized that their survival requires new methods and tools, in order to enhance their competitive capabilities (Kantur, et al., 2015).

Many organizations are facing the knowledge revolution, so it is necessary to determine the cognitive capabilities and technological culture that they possess and through which they can practice and interact with technological technologies (Jameel, 2008).

Technological progress has also changed the behavior of customers, and contributed to building an electronic relationship by relying on programs that contribute to data collection and analysis to explain their behavior and identify their needs and use them in developing appropriate plans and strategies (Cho & Pucik, 2005).

Competitive advantage is the position occupied by the organization against competitors, and creativity leads the organization to achieve competitive advantage. It is the ability to carry out various activities in the organization at the lowest level of cost compared to competitors (Porter, 1985). It also works to discover new methods that are more effective than those used by competitors by producing values and benefits for the customer that outweigh the values and benefits achieved by competitors (Correia et al., 2020).

SCA contains the elements that guarantee the organization's continuity of maintaining this advantage for the longest possible period of time (Saleh, 2019).

SCA works to implement a value-creating strategy that is not imitated in the past and can be imitated in the future by competitors (Mahdi et al., 2019).

SCA is the organization's ability to improve and maintain its competitive position in the market and to survive and excel against its competitors over a long period of time (Kadir et al., 2018).

The dimensions of SCA are differentiation, the least cost, appropriate timing, innovation, and core competency (Pratono et al., 2019; Singh & Sharma, 2018; Adams & Lamant, 2003; Hall, 1993; Conner, 1991).

It should be noted that social and technological challenges played a major role in enhancing SCA (Haseeb et al., 2019).

There is a significant impact of market orientation on product innovation, that generating market information on market behavioral orientation has a significant impact on product innovation, and that the exchange of market information and response to market information had a significant impact on product innovation (Na et al., 2019).

The dimensions of knowledge management also have a positive relationship with SCA (Mahdi et al., 2019).

There is also a positive effect between product innovation and market leadership on SCA (Kuncoro & Suriani, 2018).

It is worth noting that entrepreneurial orientation, marketing orientation, and knowledge management orientation have a significant positive impact on SCA (Guimaraes et al., 2018).

New innovations in product design, packaging, and pricing are also developing a SCA (Quaye & Mensah, 2018).

The resource-based view that involves achieving SCA depends on the organization's possession of distinct, scarce and valuable resources that cannot be imitated by competitors (Maker & Korir, 2017).

The human and leadership capabilities, infrastructure, technological capabilities, and the reputation of the organization positively affect the achievement of SCA (Nzyoka et al., 2017).

Finally, there is a significant effect of intellectual capital and knowledge management on SCA (Osman & Ngah, 2016).

It is worth noting that digital transformation affects individuals, processes, products and the organization as a whole (Sayabek et al., 2020).

Therefore, subordinates must be involved in the field of digital transformation to ensure the success of the digital transformation process (Morakanyane, et al., 2020). Citizen participation in urban development issues is also necessary in order to improve the efficiency of urban management (Morozova & Kurochkin, 2020).

Researchers can better analyze digital transformation, and business managers can better plan their digital transformation processes (Steiber, et al., 2020).

The digitization of organizations is essential because they provide great opportunities for both organizations and societies, and workers must be able to transform themselves towards digitization (Andriushchenko et al., 2020).

In addition, digital transformation is an important topic due to its positive impact on organizational restructuring (Plesnci, et al., 2018), formal and informal structures (Bonanomi, et al., 2019), and business model innovation (Rachinger, et al., 2019).

There is also an essential relationship between digital transformation and employee performance development on the one hand, and organizational development on the other (Nair, 2019).

The entrepreneurs in small and medium enterprises adopt digital transformation to raise the efficiency of the performance of workers on the one hand, and the performance of projects on the other hand (Liang, 2018).

There is a strong direct positive effect between the dynamic capabilities supported by information technology and the level of digital maturity, therefore, future research should include a cluster analysis of the stages of digital maturity (Danailova, 2017).

Therefore, information systems scientists must continue to assess developments related to the role of the digital director, the role of the head of information systems, and business and IT alignment (Haffke, 2017).

It is worth noting that decision makers in non-profit organizations must understand the opportunities and challenges posed by digital transformation to allow them to formulate a digital transformation strategy, which can lead to competitive advantages and digital communication with stakeholders (Brink et al., 2020).

Therefore, sustainable development can be effectively promoted through digital transformation, and the need for governments to pay attention to appropriate financing of sustainable development programs and projects, and this requires policy makers to direct and encourage investments in the digital network infrastructure and human capital (El-Massah & Mohieldin, 2020).

A culture of experimentation and innovation among workers should be encouraged, as leaders need to align all workers around digital transformation, and organizations that are going through a digital transformation process need all the necessary tools to prepare for this change. It is also necessary for leaders to understand digital transformation, and for leaders to gather between traditional leadership practices and digital leadership to create a hybrid style between them, and through this, be able to take advantage of digital transformation opportunities (Goretti, 2019).

In addition, the digitization process will be vital in most organizations without considering the challenges they face (Keshab, 2018).

Also, organizational factors have a very strong influence on workplace learning practices to support digital transformation (Hirv, 2016).

Therefore, entrepreneurs must rely on their ability to make better use of available resources. Entrepreneurs can also become more capable by using a fluctuating approach to obtaining and using resources to improve performance (Bloodgood, 2013).

Distinguished organizations are those that have a good information technology system so that they can achieve high performance in their products and services. This is in addition to improving production and marketing processes, reducing costs, and improving quality. There are multiplicity and diversity of the services provided, and the continuous development and improvement in the current and new services (Granham, 2012).

The study is structured as follows: Section two gives a theoretical construct of digitalization and SCA. Section three presents the research design. Section four embraces the study methodology which includes a detailed description of the questionnaire, the research community, the sample, the procedure of data collection and an overview of the statistical tests used in the study. Section five presents the empirical results and discussion. Section six presents the main conclusions of the study and some recommendations for improving digitalization and SCA at communication sector in general and Telecommunication companies in Egypt in particular.

2. Literature Review

2.1. Digitalization

2.1.1. Digitalization Concept

Digitization means moving from a traditional system to a digital system based on information and communication technology in all areas of work, and seeking to develop business models by investing in technologies, developing talent and reorganizing processes to create new experiences for customers and employees, in addition to security, human, and technical requirements (Sayabek, Sueubayeva, 2020).

Digitization is a process of major organizational change driven by, or dependent on, digital technology that can transform the way businesses are run (Osmundsen, 2018).

Digitization is a representation of the technological aspect of an information system, and it can also be used as an alternative at other times. The task of processing, storing, updating, retrieving and delivering information to the beneficiaries relied on manual methods, despite their limitations and inability in many cases to accomplish the required task efficiently and effectively. However, after the huge increase in the size and type of data and information, the use of modern information technology in the application of the information system is required (Loudon & Loudon, 2014).

Digitization is the process of converting texts or images into binary signals that are compatible with the computer language for the purpose of processing and storing them in a miniature form, maintaining and easy use of them and their transmission through means of communication and information networks. Digitization is a new approach to managing information in a new knowledge society, working to make available and connect traditional libraries to the beneficiaries within their homes (Pandey & Misra, 2014).

Digitization is the process of converting an analog material into an electronic digital form. Digitization is the sum of the processes necessary to convert written and printed materials into an electronic form. The outputs of the digitization process are electronic receptacles that can be broadcast through an intranet or through the Internet (Shariful, 2011).

Digitization is the tools, techniques and systems that can be used to obtain, process, store and retrieve information and data. These technologies include all kinds of computers, storage methods, printing and reading, in addition to receiving methods, transmission, satellite, mobile networks, fax, and software systems. Briefly, digitization is the computer hardware, software, plans, and data and information provision as an essential resource for achieving information technology in the organization (Post & Anderson, 2006).

Digitization is a strategic weapon that can help build and strengthen the capabilities of the organization by providing the best data and information in a way that contributes to strengthening the relationship between digitization, customers and other organizations (Daft, 2005).

Digitization is the technological aspect of the information system, which represents the hardware, databases, networks, etc. Digitization is a group of individuals, data, procedures, hardware and software that work to achieve the objectives of the organization (Turban, 2005).

Digitization is a procedure for converting the intellectual content available on a traditional storage medium such as periodical articles, books, manuscripts, maps, etc. into a digital form (Hodges, 2004).

Digitization is the process of converting information sources of all kinds, such as books, periodicals, audio recordings, and still images, into a readable form by means of computer technologies through the binary system (Bits). Bits are the basic unit of information for an information system based on computers, and the information is converted into a set of binary numbers. This process is carried out through a set of specialized techniques and devices (Kuny, 2002).

Digitization is a method that allows the transfer of data and information from the traditional manual system to the digital system (Buresi, 2002).

Digitization is the electronic process of producing electronic or digital symbols through a document, any physical object or electronic signals (Cacaly, 2001).

The researcher believes that digitization is a multidimensional phenomenon, and digital technology is of extraordinary strength and speed in human history. And digitization means all the means and devices that individuals in the organization can use in order to obtain and process data and information for the purpose of storing and referencing them when needed. Digitization consists of individuals, electronic computers, telecommunications, audio-visual and printed technology, software, experiences, cumulative skills, and physical, organizational and administrative means that people use to obtain information. In other words, digitization represents the process of obtaining and managing collections of electronic texts by converting information sources available on traditional storage media into an electronic image, and thus the traditional text becomes a digitized text that can be viewed through computer applications.

2.1.2. Digitalization Dimensions

There are four dimensions of digitization. They are strategic planning for digitalization, preparing leaders in the field of digitalization, the institutional environment for digitalization, and attracting human skills for digitalization. These dimensions were identified in the light of many previous studies (Hamad, 2020, Hadeer, 2017 Brink, et al.; 2020, Skog, 2019; Tugce, 2019; Bongiorno, et al., 2018; Douglas et al., 2018; Keshab. 2018; Hirv, 2016; Ernst & Frische, 2015).

2.1.2.1. Strategic Planning for Digitalization

Strategic planning relates to the extent to which the organization takes strategic planning measures for digitization, the extent to which there is a strategic plan for digitization that includes the vision and message compatible with the strategic objectives, the extent to which the organization develops operational plans for digitalization in accordance with technological, organizational and legislative developments, the extent of integration and compatibility of the strategic plan with other parties, and the extent to which the organization follows creative and innovative methods in strategic planning in the field of digitalization.

2.1.2.2. Preparing Leaders in the field of Digitalization

The preparation of leaders in the field of digitization is related to the extent to which the organization develops a plan to develop and prepare leaders and raise their level of familiarity with the digitization process, the extent to which the organization develops plans to prepare leaders on an ongoing basis, the extent to which leaders of digitalization are developed in all departments and branches in a way that achieves integration in the digitization process, and the extent to which all leaders in the decision-making process get related to digitization, and the extent of their participation in the digitization process in creative and innovative ways.

2.1.2.3. Institutional Environment for Digitalization

The institutional environment for digitization is related to the extent to which the organization implements the institutional structure for digitization project, the extent to which there is an organizational unit for the institutional structure of digitization, the extent to which there is a clear and effective mechanism for that unit, coordination between these units and other departments in the organization in an integrated manner, and the extent to which the institutional structure contributes to the development of the organization's orientation towards transformation.

2.1.2.4. Attracting Human Skills for Digitalization process

Attracting skills and competencies for the digitization process is related to the extent to which the organization attracts human skills and competencies for the digitization process, and the extent to which there is an approved plan to attract human competencies for the digital process, and the extent to which the organization attracts digital competencies according to the plan that has been developed, and the organization's exchanges of specialized human competencies in the field of digitization, and the organization's finding creative and innovative methods to attract and maintain skills and competencies for the digitization process.

2.2. Sustainable Competitive Advantage

2.2.1. Sustainable Competitive Advantage Concept

Competitive advantage is the position that the organization occupies against competitors, and competitive advantage arises as soon as the organization discovers new ways that are more effective than competitors, or in other words, the competitive advantage arises from the value that the organization can create for its customers, and this definition focuses on that creativity leads the organization to achieving the competitive advantage, and that judging it is related to the values obtained by the customer (Porter, 1985).

Competitive advantage is the ability to engage in various activities in the organization at the lowest level of cost compared to competitors (Porter, Porter).

Competitive advantage is the discovery of new methods that are more effective than those used by competitors by producing values and benefits for the customer that outweigh the values and benefits achieved by competitors (Correia et al., 2020).

The first to put forward the idea of the concept of SCA is (George Day, 1984), indicating that different models of strategies can be obtained for the purpose of helping the organization to survive, but the fact on which it is based in achieving SCA is what he presented (1985, Porter) in his well-known model in determining competition strategies that have been linked to the environment through the products offered by the organization, and are compatible with the customer's needs and capabilities.

SCA is the developed model of the competitive advantage that the organization targets in the market, because it contains the elements that guarantee the organization the continuity of maintaining this advantage for the longest possible period of time. The most important characteristic of this definition is that it focuses on the quality dimension, which ensures the continuity of its position in competitive markets (Saleh, 2019).

SCA is the implementation of a value-creating strategy that is not imitated in the past and can be imitated in the future by competitors. The most important characteristic of this definition is that it focuses on the essence of SCA, which is creativity, which is one of the dimensions of SCA (Mahdi et al., 2019).

SCA is the organization's ability to improve and maintain its competitive position in the market and to survive and excel against its competitors over a long period of time. The most important characteristic of this definition is that it focuses on the element of efficiency, which is one of the dimensions of SCA (Kadir et al., 2018).

2.2.2. Sustainable Competitive Advantage Dimensions

The dimensions of SCA are differentiation, the least cost, appropriate timing, innovation, and core competency (Pratono et al., 2019; Singh & Sharma, 2018; Adams & Lamant, 2003; Hall, 1993; Conner, 1991):

2.2.2.1. Differentiation

Differentiation means providing the unique brand, distinguished technology, customer service and products to gain a large market share compared to competitors. It is a competitive strategy that involves the uniqueness of different characteristics in the good or service provided to customers, in a way that is perceived by the customer as something unique or distinctive, and it can represent one of the basic barriers to competitors. The most important areas of differentiation are (1) differentiation based on technical differentiation, (2) differentiation on the basis of providing greater services to customers, (3) differentiation on the basis of quality, (4) differentiation on the basis that the organization provides more value to the customer for the amount paid (Pratono et al. al., 2019).

Differentiation is in distinguishing the product or service provided by the organization, and creating something that is seen within the industry as being unique. By creating a high degree of distinction, the organization can find a distinctive competitive position in the field of competition (Matos, 2015).

Differentiation achieves several advantages for business organizations represented in providing distinguished service to customers accompanied by outstanding quality, and a close relationship with the customer (Porter, 1985).

2.2.2.2. The Least Expensive

Business organizations that compete through the lowest cost, and organizations seek a major goal of achieving a low cost for their products and services, and the lowest cost is the organization's ability to provide a less expensive good or service compared to competing organizations, which ultimately leads to profitable returns, and the organization can enjoy the advantage of lower cost by going to the market and achieving a lower price for the product or service compared to the prices of competitors, which leads to gaining a higher market share while maintaining profitability (Quairel-Lanoizelee, 2016).

2.2.2.3. Appropriate Timing

Competitive management is a time-related process. The speed of change in the competitive environment has made the world a small village. With the beginning of the twenty-first century, the focus on time has increased as an influencing factor, as time management allows the organization to achieve competitive advantage (Sapkauskiene & Leitoniene, 2016).

Organizations are witnessing a new era in which geographical borders are fading and affected by the time factor and the activation of the high speed factor that shortens time which is an absolute thing that is always characterized by succession and continuity, regardless of the fact that it is one of the external factors. Time has several characteristics (1) that it is available to everyone and everyone has the right to use and exploit it without restrictions or conditions, (2) that it can be exploited and invested without limits or restrictions, (3) that it cannot be saved, stored or kept (4) that it is not recoverable Or take advantage again, (5) that it cannot be manufactured or produced, and it cannot be purchased or obtained from any other source, and therefore it is considered an expensive asset, as time is a real wealth (Rynasiewicz, 2015).

2.2.2.4. Innovation

Creativity is the presentation of an idea and its implementation in new ways, and creativity encourages research and discovery, the development of traditional experiences and the adoption of new organizational forms (Perez et al., 2017).

Innovation means the ability to properly produce and apply new ideas, so organizations with creative strategies have processes that quickly implement, test, evaluate and review ideas in order to improve the performance of the organization (Bolatana et al., 2016).

Innovation is the ability to produce or provide a new, valuable service, and innovation is an integrated and programmed unit for any organization and arranged logically, for a group of factors that lead the organization to achieve the desired results in light of the goals, vision and mission of the organization. It can be a new solution to a problem. There are several characteristics of innovation, which are (1) the ability of the mind to discover new relationships (2) a mental process that must end in making a positive change in the practical reality of the surrounding environment, (3) the introduction of a new element in a new place, or an existing place, to perform a new job Which leads to better results, or new results (Perez et al., 2017).

2.2.2.5. Core Competency

Core competencies are things that the organization can do well, and provide advantages to the customer that are difficult for competitors to imitate (Prahalad & Hamel, 1990).

Core competencies take different forms, represented in knowledge or close relationships with customers and stakeholders. Not all competencies in the organization are essential. Rather, core competencies are those competencies that allow organizations to have a superior advantage, and they are the body of knowledge that distinguishes the organization and provides it with a SCA over others. Organizations are a variety of final products and services in the present and the future, and thus are an essential element in determining the SCA (Agha et al., 2012).

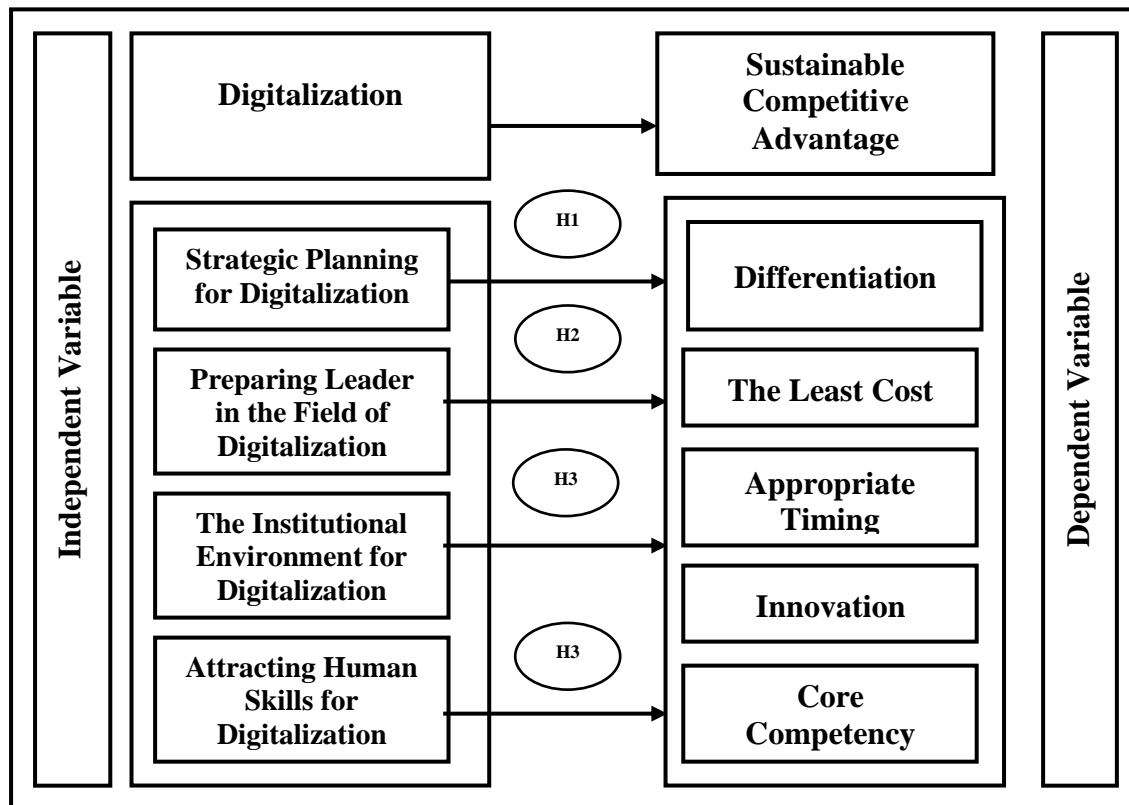
3. Research Model

The figure shows that there are one independent variable (Digitalization) and one dependent variable (DSQ). The research framework suggests that Digitalization have an impact on SCA.

Digitalization is measured in terms of strategic planning for digitalization, preparing leaders in the field of digitalization, the institutional environment for digitalization, and attracting human skills for digitalization process (Hamad, 2020, Hadeer, 2017 Brink, et al.; 2020, Skog, 2019; Tugce, 2019; Bongiorno, et al., 2018; Douglas et al., 2018; Keshab. 2018; Hirv, 2016; Ernst & Frische, 2015).

SCA is measured in terms of differentiation, the least cost, appropriate timing, innovation, and core competency (Pratono et al., 2019; Singh & Sharma, 2018; Adams & Lamant, 2003; Hall, 1993; Conner, 1991).

Figure (1) Proposed Comprehensive Conceptual Model



4. Research Questions

The research problem has two sources. The first source is to be found in previous studies. There is a lack in the number of literature review that dealt with the analysis of the relationship between digitalization and SCA. This called for the researcher to test this relationship in the Egyptian environment.

In light of the literature review, digitalization is expected to have a significant impact on society. The value creation process has changed as a result of integrating information and communication technology into the organization's operations. This change leads to efficiency and the creation of new business models such as digital platforms, and a competitive advantage can be achieved, in addition to communication and interaction. With customers and suppliers to generate new products and new evolving services, digitalization affects individuals, processes, products and the organization as a whole (Sayabek et al., 2020).

One study aimed to understand what organizations do on their digital journeys. One of the most important results of the study is that there are factors that constitute the success of the digitalization process, and organizations that seek to embark on successful digitalization journeys can rely on them. The study also recommended that subordinates can be involved in the field of digitalization to ensure the success of the digitalization process (Morakanyane, et al., 2020).

While another study aimed to identify the collective understanding of digitalization across Swiss companies, and one of the most important results of the study is that the drivers of digitalization are process

engineering and new technologies, digital business development, digital leadership, customer focus and digital marketing (Peter, et al., 2020).

One of the studies aimed to identify the experience of implementing smart city projects in Russia in the context of digitalization. One of the most important results of the study is that there is a decrease in the level of awareness and willingness to innovate in the economy and public life. The study also recommended that citizens should participate in urban development issues in order to improve the efficiency of urban management (Morozova & Kurochkin, 2020).

In another study, it focused on identifying the current knowledge about what contributes or hinders digitalization, and one of the most important results of the study is that the main drivers of digitalization have been identified. The study also recommended that researchers can analyze digitalization better, and business managers can better plan for their digitalization processes (Steiber, et al., 2020).

Another study was concerned with identifying the characteristics of sustainable development in the context of digitalization, and one of the most important results of the study is that the digitization of organizations is necessary because it provides wonderful opportunities for both organizations and societies, and the study recommended that workers should be able to change themselves towards digitization (Andriushchenko et al. , 2020).

Another study focused on identifying digitalization techniques. The study focused on the role of specific operating environment characteristics for the digitalization process. The study found that dynamism determines the need for digitalization. The study also contributed to shedding light on the commercial information of digitalization. The study also provided useful ideas for managers in terms of awareness of the operating environment, the need to be aware of technological developments, and the need and importance of environmental scanning (Gupta & Bosa, 2019).

There is a study aimed at identifying the impact of digitalization on organizational variables. The study found that digitalization is an important topic due to its positive impact on organizational restructuring (Plesnci, et al., 2018), formal and informal structures (Bonanomi, et al., 2019), and business model innovation (Rachinger, et al., 2019).

Another study analyzed the relationship between digitalization and performance, and the study concluded that there is a fundamental relationship between digitalization and employee performance development on the one hand, and organizational development on the other hand (Nair, 2019).

Another study analyzed the relationship between digitalization and employee performance. The study found the importance of entrepreneurs in small and medium enterprises in adopting digitalization to raise the efficiency of the employee performance and the project performance (Liang, 2018).

Another study aimed to survey the opinions of digitalization managers from companies in the Netherlands and the United Kingdom, and one of the most important results of the study is that there is a strong direct positive effect between the dynamic capabilities supported by information technology and the level of digital maturity. The study also recommended that future research should include a cluster analysis of the stages of maturity digital (Danailova, 2017).

Another study aimed to identify the effects of digitalization, and one of the most important results of the study is that companies succeeded in working under a dual design of information technology, and alignment of business and information technology (Haffke, 2017).

As for the previous studies regarding SCA, there is a study aiming at determining the role of social and technological challenges in achieving SCA, and the results of the study revealed that social and technological challenges played a major role in enhancing SCA. Moreover, strategic compatibility was a major factor in reversing the positive roles of social and technological factors in SCA (Hasseeb et al., 2019).

Another study aimed at examining the relationships between market orientation, marketing innovation, SCA and performance. Product innovation is weak. The study indicated that generating market information and responding to market information on market behavioral orientation has a significant impact on product innovation, but the effect of market information exchange on product innovation is weak. The exchange of market information and the response to market information had a significant impact on product innovation (Na et al., 2019).

While another study aimed to reveal the relationship between knowledge management and SCA, and the study concluded that the dimensions of knowledge management (knowledge generation, knowledge

storage, knowledge sharing, and knowledge application) have a positive relationship with SCA (Mahdi et al., 2019).

Another study aimed to determine the relationship between product innovation, market leadership and SCA. The study concluded that there is a positive effect between product innovation and market leadership on SCA (Kuncoro & Suriani, 2018).

The second source is the pilot study, which was conducted an interview with (30) employees at Telecommunication sector in Egypt. The researcher found through the pilot study several indicators notably the important role that could be played by digitalization in affecting SCA at Telecommunication sector in Egypt. The research questions are as follows:

Q1: What is the relationship between digitalization (strategic planning for digital transformation) and SCA at Telecommunication sector in Egypt?

Q2: What is the nature of the relationship between digitalization (preparing leaders in the field of digital transformation) and SCA at Telecommunication sector in Egypt?

Q3: What is the extent of the relationship between digitalization (the institutional environment for digital transformation) and SCA at Telecommunication sector in Egypt?

Q4: What is the nature and extent of the relationship between digitalization (attracting human skills for the digital transformation) and SCA at Telecommunication sector in Egypt?

5. Research Hypotheses

In the light of a review of previous studies, there is a study that provided a framework for evaluating higher education curricula in the context of digitalization, and one of the most important results of the study is that the open virtual innovation lab fills a research gap because it overcomes a deficit in the collection of methodological skills for digitalization (North et al., 2020).

Another study aimed at evaluating the appropriateness of digital maturity models, and one of the most important results of the study is that maturity models are among the main tools in the digitalization process, and can have a key role in clarifying the concept and paths to success. The study recommended that it is necessary to focus on expanding the production of products and services from by creating smart solutions (Zapata, et al., 2020).

In another study, it focused on identifying areas of work for digitalization. One of the most important results of the study is that some industries still face difficulties in exploiting the benefits of digitalization. The study also recommended that decision makers in non-profit organizations should understand the opportunities and challenges posed by digitalization in order to allow them to formulate a digitalization strategy, which can lead to advantages, competitiveness and digital communication with stakeholders (Brink et al., 2020).

One of the studies aimed to identify the impact of digitalization on achieving sustainable development, and the results of the study were that sustainable development can be effectively promoted through digitalization. The study also indicated the need for governments to pay attention to appropriate funding for sustainable development programs and projects, and this requires policy makers to direct and encourage Investments in digital network architecture and human capital (El-Massah & Mohieldin, 2020).

Another study examined the impact of digitalization on leadership within the organization, and one of the most important results of the study is the need to stimulate a culture of experimentation and innovation among employees, and leaders need to align all workers around digitalization, and the study also recommended that companies going through a digitalization process need all the necessary tools To prepare this change. It is also necessary for leaders to understand digitalization, and there is a set of leadership characteristics. A leader must combine traditional leadership practices and digital leadership to create a hybrid approach between them, and through this, he can take advantage of digitalization opportunities (Goretti, 2019).

Another study aimed to identify how to transform a traditional organization into a performance company, and one of the most important results of the study is that the digitization process will be vital in most organizations without considering the challenges they face (Keshab, 2018).

One of the studies aimed to know the impact of long-term interventions and follow-up on the development of learning practices in the workplace in the context of digitalization, and one of the most important results of the study is that it was found that the interventions helped to strengthen many non-

formal education practices among trainers, and that organizational factors have a strong impact very much on workplace learning practices to support digitalization (Hirv, 2016).

Another study identifies how corporate entrepreneurs seize opportunities and the ability to deal with threats by obtaining, controlling, managing and using resources. The study indicated the need for businessmen to rely on their ability to improve their use of available resources. The study also pointed out how entrepreneurs can become more capable by using the volatility approach in obtaining and using resources in order to improve performance (Bloodgood, 2013).

There is a study aiming at identifying the role of information technology in achieving the strategic direction towards enhancing the competitiveness of the organization. The study indicated that distinguished organizations have a good information technology system in order to be able to achieve high performance in the products and services they provide.

This is in addition to improving production and marketing processes, reducing costs, and improving quality. The study also indicated that there is a significant relationship between information technology and the production of new services, the multiplicity and diversity of the services provided, and the continuous development and improvement in the current and new services (Granham, 2012).

As for the previous studies related to SCA, there is another study to identify the impact of strategic motives (entrepreneurial orientation, marketing orientation, and knowledge management orientation) on clean production and SCA. Among its results, the entrepreneurial orientation, marketing orientation, and knowledge management orientation have a significant positive impact on SCA (Guimaraes et al., 2018).

Another study determined how small and medium-sized enterprises can reach the competitive advantage. The study found that new innovations in product design, packaging, promotional innovations, retail innovations and pricing innovations develop SCA in the market for small and medium-sized enterprises, and that attention must be paid to the element of creativity because it has a significant impact on achieving SCA (Quaye & Mensah, 2018).

Another study concluded that the resource-based view that involves achieving SCA depends on the organization's possession of distinct, rare and valuable resources that cannot be imitated by competitors (Maker & Korir, 2017).

In the same context, another study found that human and leadership capabilities, infrastructure, technological capabilities, and the reputation of the organization positively affect the achievement of SCA (Nzyoka et al., 2017).

Another study aimed to identify the impact of intellectual capital on SCA. The study concluded that there is a significant effect of intellectual capital and knowledge management on SCA (Osman & Ngah, 2016).

The following hypotheses were developed to decide if there is a significant correlation between digitalization and SCA.

H1: There is no statistically significant relationship between digitalization (strategic planning for digital transformation) and SCA at Telecommunication sector in Egypt.

H2: Digitalization (preparing leaders in the field of digital transformation) has no statistically significant effect on SI at Telecommunication sector in Egypt.

H3: There is no relationship between digitalization (the institutional environment for digital transformation) and SCA at Telecommunication sector in Egypt.

H4: There is no statistically significant relationship between digitalization (attracting human skills for the digital transformation) and SCA at Telecommunication sector in Egypt.

6. Research Population and Sample

The population of the study included all employees at Telecommunication sector in Egypt. The total population is 56800 employees. Determination of respondent sample size was calculated using the formula (Daniel, 1999) as follows:

$$n = \frac{N \times (Z)^2 \times P(1-P)}{d^2(N-1) + (Z)^2 \times P(1-P)}$$

A number of samples, obtained by 381 employees at Telecommunication sector in Egypt, are shown in Table (1).

Table (1) Distribution of the Sample Size

Telecommunication Sector in Egypt	Numbers	Percentage	Sample Size
1. Telecom Egypt	33000	58%	381X 58% = 221
2. Vodafone	7800	14%	381X 14% = 54
3. Orange	8000	14%	381X 14% = 53
4. Télécommunications	8000	14%	381X 14% = 53
Total	56800	100%	381X 100% = 381

Source: Personnel Department at Telecommunication Sector in Egypt, 2020

Table (2) Characteristics of Items of the Sample

Demographic Variables		Frequency	Percentage
1. Gender	Male	240	80%
	Female	60	20%
	Total	300	100%
2. Marital Status	Single	105	35%
	Married	195	65%
	Total	300	100%
3. Age	From 30 to 45	180	60%
	Above 45	120	40%
	Total	300	100%
4. Educational Level	University	210	70%
	Post Graduate	90	30%
	Total	300	100%
5. Period of Experience	From 5 to 10	180	60%
	More than 10	120	40%
	Total	300	100%

7. Procedure

The goal of this study was to identify the role of digitalization in enhancing SCA. A survey research method was used to collect data. The questionnaire included three questions, relating to digitalization, SCA, and biographical information of employees at Telecommunication sector in Egypt. About 381 survey questionnaires were distributed. Multiple follow-ups yielded 300 statistically usable questionnaires. Survey responses were 78%.

8. Research Variables and Methods of Measuring

The 20-item scale digitalization section is based on Hamad, 2020, Hadeer, 2017 Brink, et al.; 2020, Skog, 2019; Tugce, 2019; Bongiorno, et al., 2018; Douglas et al., 2018; Keshab, 2018; Hirv, 2016; Ernst & Frische, 2015. There were five items measuring strategic planning for digitalization, five items measuring preparing leaders in the field of digitalization, five items measuring the institutional environment for digitalization, and five items measuring attracting human skills for digitalization process.

The 18-item scale SCA is based on Pratono et al., 2019; Singh & Sharma, 2018; Adams & Lamant, 2003; Hall, 1993; Conner, 1991. There were four items measuring differentiation, three items measuring the least cost, four items measuring appropriate timing, three items measuring innovation, and four items measuring core competency.

Responses to all items scales were anchored on a five (5) point Likert scale for each statement which ranges from (5) “full agreement,” (4) for “agree,” (3) for “neutral,” (2) for “disagree,” and (1) for “full disagreement”.

9. Data Analysis and Hypotheses Testing

9.1. Coding of Variables

Table (3) Description and Measuring of the Research Variables

Main Variables		Sub-Variables	Number of Statement	Methods of Measuring Variables
Independent Variable	Digitalization	Strategic Planning for Digitalization	5	Hamad, 2020, Hadeer, 2017 Brink, et al.; 2020, Skog, 2019; Tugce, 2019; Bongiorno, et al.,
		Preparing Leader in the Field of Digitalization	5	
		The Institutional Environment for	5	

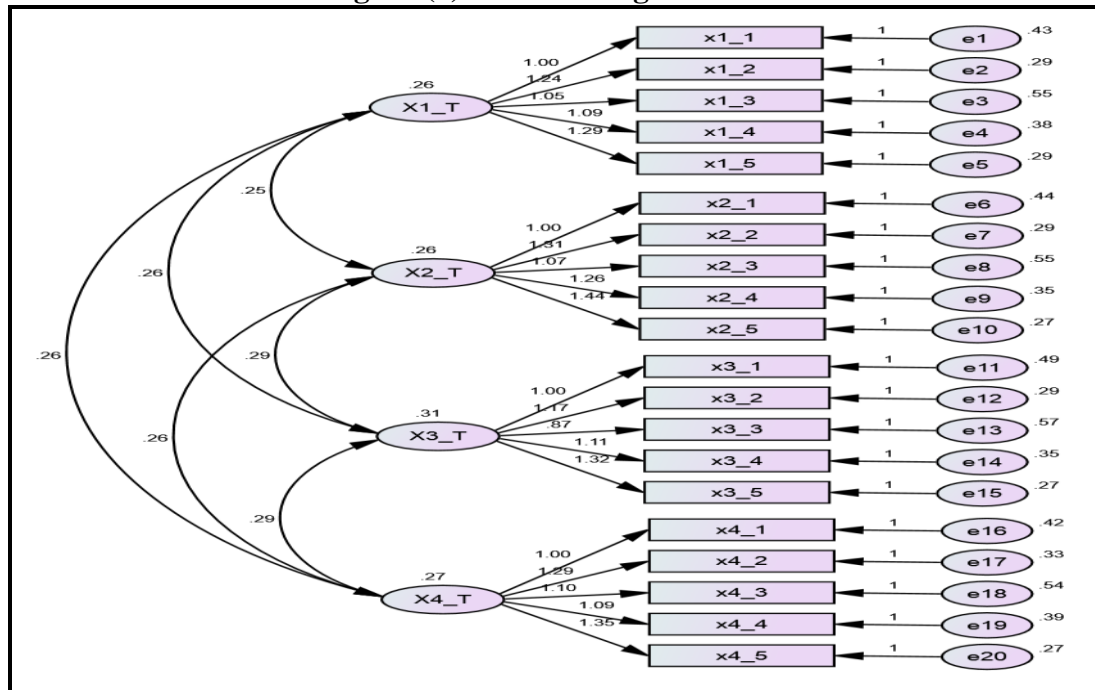
		Digitalization		2018; Douglas et al., 2018; Keshab. 2018; Hirv, 2016; Ernst & Frische, 2015
		Attracting Human Skills for Digitalization	5	
		Total Digitalization	20	
Dependent Variable	Sustainable Competitive Advantage	Differentiation	4	Pratono et al., 2019; Singh & Sharma, 2018; Adams & Lamant, 2003; Hall, 1993; Conner, 1991
		The Least Cost	3	
		Appropriate Timing	4	
		Innovation	3	
		Core Competency	4	
		Total SCA	18	

9.2. Construct Validity

9.2.1. Digitalization

The researcher used Confirmatory Factor Analysis (CFA) for digitalization. This can be illustrated by the following figure:

Figure (2) CFA For Digitalization



From the previous figure, it is clear that all the statement of digitalization are greater than 0.50, which corresponds to GFI. This is a good indicator of all other statistical analysis. The quality indicators for digitalization can be illustrated in the following table:

Table (4) Quality Indicators for Digitalization Using AMOS Analysis

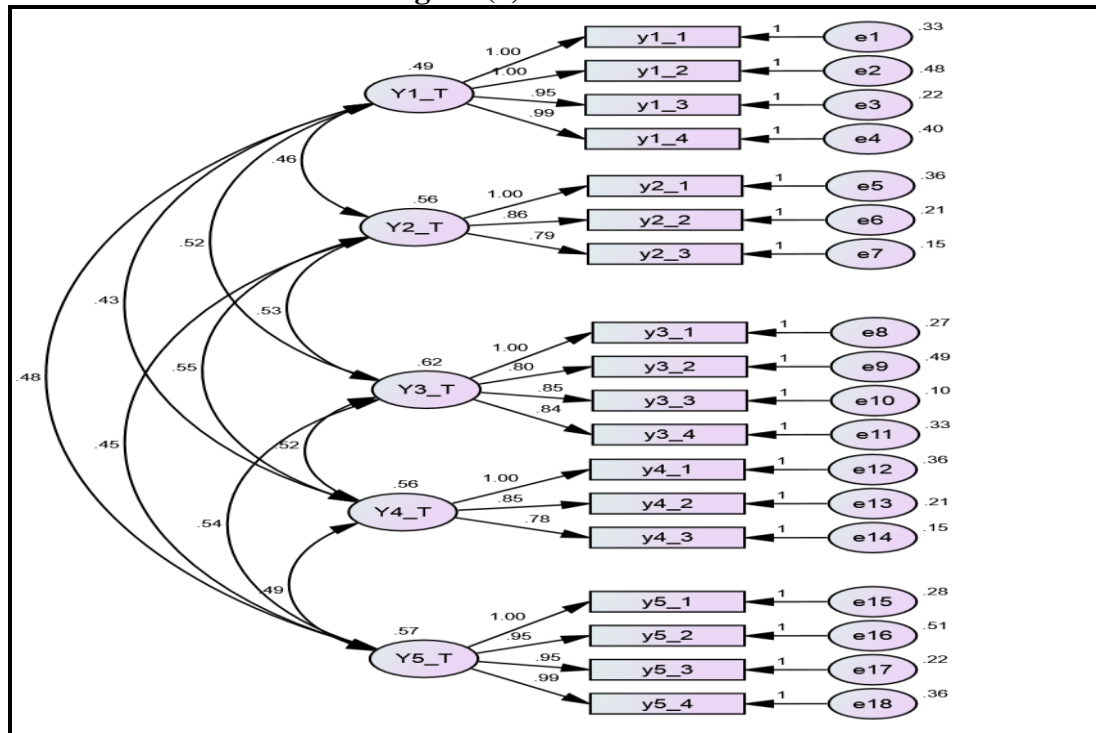
Test the Quality of the Model Acceptance Condition (Daire et al., 2008)	Test Value
χ^2 / Degree of freedom >5	1082.848
P. value > 0.5	0.000
Goodness of fit Index (GFI) > 0.90	0.723
Tuker-Lewis Index (TLI) > 0.95	0.739
Comparative Fit Index (CFI) > 0.90	0.775
Normed Fit Index (NFI) > 0.90	0.747
Incremental Fit Index (IFI) > 0.95	0.777
Relative Fit Index (RFI) > 0.90	0.761
Root Mean Square Residual (RMR) < 0.5	0.051
Root Mean Square Error of Approximation (RMSEA) < 0.5	0.137

In light of the above-mentioned indicators, it is clear that the previous indicators are good for making all other statistical analysis.

9.2.2. Sustainable Competitive Advantage

The researcher used CFA for SCA. This can be illustrated by the following figure:

Figure (3) CFA For SCA



According to Figure (2), it is clear that all the statement of SCA are greater than 0.50. This is a good indicator of all other statistical analysis. The quality indicators for SCA can be illustrated in the following table:

Table (5) Quality Indicators for SCA Using AMOS Analysis

Test the Quality of the Model Acceptance Condition (Daire et al., 2008)		Test Value
X^2 / Degree of freedom < 5		935.711
P. value > 0.5		0.000
Goodness of fit Index (GFI) > 0.90		0.745
Tuker-Lewis Index (TLI) > 0.95		0.786
Comparative Fit Index (CFI) > 0.95		0.825
Normed Fit Index (NFI) > 0.90		0.804
Incremental Fit Index (IFI) > 0.95		0.826
Relative Fit Index (RFI) > 0.90		0.761
Root Mean Square Residual (RMR) < 0.5		0.050
Root Mean Square Error of Approximation (RMSEA) < 0.5		0.147

In light of the above-mentioned indicators, it is clear that the previous indicators are good for making all other statistical analysis.

9.3. Descriptive Analysis

Table (6) shows the mean and standard deviations of Digitalization and SCA

Variables	The Dimension	Mean	Standard Deviation
Digitalization	Strategic Planning for Digitalization	3.84	0.634
	Preparing Leader in the Field of Digitalization	3.83	0.675
	The Institutional Environment for Digitalization	3.86	0.665
	Attracting Human Skills for Digitalization	3.84	0.662
	Total Measurement	3.84	0.614
Sustainable Competitive Advantage	Differentiation	3.86	0.752
	The Least Cost	3.95	0.716
	Appropriate Timing	4.00	0.744
	Innovation	3.95	0.716
	Core Competency	3.84	0.785
	Total Measurement	3.92	0.676

According to Table (6), most of the respondents identified strategic planning for digitalization (M=3.84, SD=0.634), preparing leader in the field of digitalization (M=3.83, SD=0.675), The institutional environment for digitalization (M=3.86, SD=0.665), attracting human skills for digitalization (M=3.84, SD=0.662), and total digitalization (M=3.84, SD=0.614).

Regarding to SCA, most of the respondents identified the differentiation (M=3.86, SD=0.752), The least cost (M=3.95, SD=0.716), appropriate timing (M=4.00, SD=0.774), innovation (M=3.95, SD=0.716), core competency (M=3.84, SD=0.785), and total SCA (M=3.92, SD=0.676).

9.4. Evaluating Reliability

Table (7) Reliability of Digitalization and SCA

Variables	Dimension	Number of Statement	ACC
Digitalization	Strategic Planning for Digitalization	5	0.802
	Preparing Leader in the Field of Digitalization	5	0.830
	The Institutional Environment for Digitalization	5	0.815
	Attracting Human Skills for Digitalization	5	0.817
	Total Measurement	20	0.947
Sustainable Competitive Advantage	Differentiation	4	0.841
	The Least Cost	3	0.833
	Appropriate Timing	4	0.867
	Innovation	3	0.833
	Core Competency	4	0.857
	Total Measurement	18	0.958

Table (7) presents the reliability of digitalization. The 20 items of digitalization are reliable because the ACC is 0.947. Strategic planning for digitalization, which consists of 5 items, is reliable because the ACC is 0.802. The 5 items related to preparing leader in the field of digitalization are reliable because the ACC is 0.830. The 5 items related to the institutional environment for digitalization are reliable because the ACC is 0.815. Attracting human skills for digitalization, which consists of 5 items, is reliable because the ACC is 0.817. Thus, the internal consistency of digitalization can be acceptable.

The 18 items of SCA are reliable because the ACC is 0.958. Differentiation, which consists of 4 items, is reliable because the ACC is 0.841. The 3 items related to the least cost are reliable because the ACC is 0.833 while the 4 items of appropriate timing are reliable because the ACC is 0.867. The 3 items related to innovation are reliable because the ACC is 0.833 while the 4 items of core competency are reliable because the ACC is 0.857. Thus, the internal consistency of SCA can be acceptable.

9.5. The Means, St. Deviations and Correlation among Variables

Table (8) Means, Standard Deviations and Intercorrelations among Variables

Variables	Mean	Std. Deviation	Digitalization	SCA
Digitalization	3.84	0.614	1	
Sustainable Competitive Advantage	3.92	0.676	0.952**	1

Table (8) shows correlation coefficients between digitalization and SCA. Digitalization is (Mean=3.84; SD=0.614), while SCA is (Mean=3.92; SD= 0.676). Also, the correlation between digitalization and SCA is (R=0.952; P <0.01).

9.6. The Correlation between Digitalization and SCA

Table (9) Correlation Matrix between Digitalization and SCA

Research Variables	1	2	3		4
Strategic Planning for Digitalization	1				
Preparing Leader in the Field of Digitalization	0.806**	1			
The Institutional Environment for Digitalization	0.779**	0.860**	1		
Attracting Human Skills for Digitalization	0.811**	0.830**	0.845**	1	
Sustainable Competitive Advantage	0.860**	0.902**	0.883**	0.899**	1

Based on Table (9), correlation between digitalization (Strategic Planning for Digitalization) and SCA is 0.860 whereas digitalization (Preparing Leader in the Field of Digitalization) and SCA shows correlation value of 0.902. Also, Digitalization (The Institutional Environment for Digitalization) and SCA is 0.833 whereas digitalization (Attracting Human Skills for Digitalization) and SCA shows correlation value of 0.899. The overall correlation between digitalization and SCA is 0.952.

9.6.1. Digitalization (Strategic Planning for Digitalization) and SCA

Table (10) MRA Results for Digitalization (Strategic Planning for Digitalization) and SCA

Digitalization (Strategic Planning for Digitalization)	Beta	R	R ²
1. The organization has taken strategic planning actions for digitization.	0.150**	0.588	0.345
2. The organization has a strategic plan for digitization that includes the vision and mission compatible with its objectives.	0.274**	0.714	0.509
3. The organization is constantly developing the strategic plan for digitization in accordance with technological and legislative developments.	0.158**	0.523	0.273
4. The strategic plan included a plan for integration and compatibility with the efforts of other relevant authorities.	0.268**	0.673	0.452
5. The organization has adopted innovative methods in strategic planning in the field of digitization.	0.281**	0.728	0.529
<ul style="list-style-type: none"> ▪ MCC ▪ DC ▪ Calculated F ▪ Degree of Freedom ▪ Indexed F ▪ Level of Significance 		0.866 0.751 176.994 5, 294 3.01 0.000	

As Table (10) proves, the MRA resulted in the R of 0.866 demonstrating that the 5 independent variables of digitalization (Strategic Planning for Digitalization) construe SCA significantly. Furthermore, the value of R², 5 independent variables of digitalization (Strategic Planning for Digitalization) can explain 0.75% of the total factors in SCA level. Hence, 25% are explained by the other factors. Therefore, there is enough empirical evidence to reject the null hypothesis that it said there is no relationship between digitalization (Strategic Planning for Digitalization) and SCA.

9.6.2. Digitalization (Preparing Leader in the Field of Digitalization) and SCA

Table (11) MRA Results for Digitalization (Preparing Leader in the Field of Digitalization) and SCA

Digitalization (Preparing Leader in the Field of Digitalization)	Beta	R	R ²
1. The organization has developed a plan to prepare leaders and raise their level of familiarity with the digitization process.	0.172**	0.640	0.409
2. The organization is working to develop leaders in the process of digitization and improve them continuously.	0.296**	0.769	0.591
3. The organization develops digitization leaders in all departments in a way that achieves integration in the digitization process.	0.123**	0.574	0.329
4. All leaders are involved in the decision-making process related to digitization.	0.195**	0.705	0.497
5. The organization engages leaders in the digitization process in creative and innovative ways.	0.357**	0.797	0.635
<ul style="list-style-type: none"> ▪ MCC ▪ DC ▪ Calculated F ▪ Degree of Freedom ▪ Indexed F ▪ Level of Significance 		0.911 0.830 287.274 5, 294 3.01 0.000	

As Table (11) proves, the MRA resulted in the R of 0.911. This means that SCA has been significantly explained by the 5 independent variables of digitalization (Preparing Leader in the Field of Digitalization). As a result of the value of R², the five independent variables of digitalization (Preparing Leader in the Field of Digitalization) justified 83% of the total factors in SCA level. Hence, 17% are explained by the other factors. So, there is enough empirical evidence to reject the null hypothesis that it said there is no relationship between digitalization (Preparing Leader in the Field of Digitalization) and SCA.

9.6.3. Digitalization (The Institutional Environment for Digitalization) and SCA

As Table (12) proves, the MRA resulted in the R of 0.887 demonstrating that the 5 independent variables of digitalization (The Institutional Environment for Digitalization) construe SCA significantly. Furthermore, the value of R^2 , 5 independent variables of digitalization (The Institutional Environment for Digitalization) can explain 0.78% of the total factors in SCA level. Hence, 22% are explained by the other factors. Therefore, there is enough empirical evidence to reject the null hypothesis that it said there is no relationship between digitalization (The Institutional Environment for Digitalization) and SCA.

Table (12) MRA Results for Digitalization (The Institutional Environment for Digitalization) and SCA

Digitalization (The Institutional Environment for Digitalization)	Beta	R	R ²
1. The organization is implementing the institutional infrastructure project for digitization.	0.158**	0.604	0.364
2. The organization has established an organizational unit for the institutional structure and has assigned clear tasks and responsibilities.	0.286**	0.746	0.556
3. The organizational unit of the institutional structure has a clear and effective mechanism.	0.214**	0.572	0.327
4. Coordination is made between the organizational unit of the institutional structure and other departments in an integrated manner.	0.169**	0.660	0.435
5. The institutional structure contributed to the development of the organization's approach to digitization in light of quality, time and cost.	0.319**	0.767	0.588
<ul style="list-style-type: none"> ▪ MCC ▪ DC ▪ Calculated F ▪ Degree of Freedom ▪ Indexed F ▪ Level of Significance 		0.887 0.787 217.354 5, 294 3.01 0.00	

9.6.4. Digitalization (Attracting Human Skills for Digitalization) and SCA

Table (13) MRA Results for Digitalization (Attracting Human Skills for Digitalization) and SCA

Digitalization (Attracting Human Skills for Digitalization)	Beta	R	R ²
1. The organization has taken measures to attract skills and competencies for the digitization.	0.148**	0.621	0.385
2. A plan has been prepared to attract digital competencies to enhance the capabilities necessary to achieve the digitization strategy.	0.249**	0.739	0.546
3. The organization is attracting a number of human competencies in the field of digital according to the specific plan.	0.219**	0.606	0.367
4. The organization attracts and exchanges human competencies to benefit from them in the field of digitization.	0.255**	0.684	0.467
5. The organization finds innovative ways to attract and preserve human skills for the digitization.	0.300**	0.769	0.591
<ul style="list-style-type: none"> ▪ MCC ▪ DC ▪ Calculated F ▪ Degree of Freedom ▪ Indexed F ▪ Level of Significance 		0.902 0.813 256.170 5, 294 3.01 0.000	

As Table (13) proves, the MRA resulted in the R of 0.902 demonstrating that the 5 independent variables of digitalization (Attracting Human Skills for Digitalization) construe SCA significantly. Furthermore, the value of R^2 , 5 independent variables of digitalization (Attracting Human Skills for Digitalization) can explain 0.81% of the total factors in SCA level. Hence, 19% are explained by the other factors. Therefore, there is enough empirical evidence to reject the null hypothesis that it said there is no relationship between digitalization (Attracting Human Skills for Digitalization) and SCA.

10. Research Results

1. The decrease in the number of employees holding a master's degree and a doctorate in the study sector means that the organization affiliated with this sector does not make privileges for holders of higher educational degrees.

2. The age group that works in the field of information is mostly young meaning that this group needs intensive training in order to be able to gain experience in the operations related to the organization.
3. There is a significant relationship between the variables under study, which confirms that organizations in this sector invest all their devices and equipment in order to improve organization performance.
4. The study showed the weakness of the variable of skills and capabilities of employees in this sector, which requires activating this variable by working to raise the skills and capabilities of employees and training them so that they can gain experience in dealing with devices and equipment.
5. Communication networks play an important role in improving organization performance, and the current study has shown that there is a fundamental relationship between improving communication networks and achieving CA on the one hand, and the quality of services provided on the other.
6. The study showed the importance of hardware, software, databases, communication networks and others, which is reflected in the organization performance of companies operating in this sector.
7. Despite the existence of communication networks, devices, and equipment. The level of use of information technology did not achieve the required level, and perhaps this is due to the weak experiences and capabilities of employees in this field.
8. The current study showed that information technology plays an important role in reducing the time taken between customer contact and the delivery of the product that meets his needs and desires.
9. The current study showed that communication networks can work more efficiently and effectively than they are now, and this can be achieved through contacting customers and exchanging information among them.
10. There is a statistically significant relationship between the dimensions of digitization represented in strategic planning, preparing leaders, institutional structure, attracting skills, competencies and quality of service on the one hand, and CA on the other.
11. The strategic planning for digitization is weak, in terms of the shortcomings in taking actions for the strategic planning of digitization, weakness of the strategic plan for digitization that includes the vision and the message compatible with the strategic objectives, and the inadequacy of the organization's development of operational plans for the strategic plan for digitization on an ongoing basis and in accordance with technological and organization developments. There is a lack of integration and compatibility between the organization's strategic plan and the governmental efforts exerted. The organization's failure to follow creative and innovative methods in strategic planning in the field of digitization.
12. There is weak preparation of leaders in the field of digitization in terms of the organization's failure to develop a plan to develop and prepare leaders and raise their level of knowledge of the digitization process, and inadequacy of implementing the plan to develop and prepare leaders in the digitization process and continuous improvement of these plans. There is weakness of the organization's development of digitization leaders in all departments and branches in a way that achieves integration in the digitization process, and leaders do not participate in the decision-making process related to digitization.
13. The weakness of the institutional structure for digitization in terms of the failure of the organization to implement the project of the institutional structure for digitization, the failure to establish an organization unit for the institutional structure linked to the senior management with clear tasks, responsibilities and mechanism, the lack of coordination between this unit and other departments in an integrated manner, the weak contribution of the institutional structure to the development of the organization towards digitization.
14. Weakness in attracting human skills and competencies for the digitization process, in terms of the organization's failure in the procedures for attracting human skills and competencies for the digitization process, and the absence of an approved plan to attract digital human competencies with the aim of enhancing the capabilities necessary to achieve the digitization strategy, not developing a plan to attract digital human skills and competencies continuously with the aim of improvement and development in the organization, the failure of the organization to attract and exchange human competencies specialized in the field of digitization, the absence of creative and innovative mechanisms and methods concerned with attracting human skills and competencies in the field of digitization.

15. Digitization helps improve the services provided to customers. Digitization is also based on employing technology in an optimal manner, in a manner that serves the workflow within the organization, and in its dealings with customers, in order to facilitate access to services.
16. The issue of digitization is one of the most prominent modern administrative concepts that have emerged during the past few years due to the increasing interest in information, and it has been associated with the tremendous development of information and communication technology.
17. The importance of digitization appeared in that it provides protection from external threats, takes advantage of available opportunities, and adapts to new rules in internal and external markets.
18. Digital-oriented organizations tend to adopt digital initiatives and achieve distinct levels of creativity and innovation, as they have a vision in terms of using advanced technologies to provide innovative products and services, and improve the performance of their operations.
19. Digitization has a significant impact on society, and communication and interaction with customers and suppliers to generate new products and new advanced services, therefore digitization affects individuals, processes, products and the organization as a whole.
20. The digitization of a organization is essential in the current stage, as it provides great opportunities for both organizations and societies.
21. Digitization is an important topic due to its positive impact on organizational restructuring, formal and informal structures, and business model innovation.
22. There is an essential relationship between digitization and employee performance development on the one hand, and organizational development on the other.
23. The digitization process will be vital in most organizations without considering the challenges they face. Organizations that have a good information technology system can achieve high performance in their products and services. This is in addition to improving production and marketing processes, reducing costs, and improving quality besides the production of new services, the multiplicity and diversity of the services provided, and the continuous development and improvement of the current and new services.

11. Research Recommendations

1. The need for organizations affiliated with this sector to pay attention to developing the skills and experiences of employees in terms of using modern devices and technology in the world of technology, markets and products.
2. The necessity of paying attention to information technology and the ability to use it and manage it in terms of employing the skills and capabilities of employees in this sector.
3. Effective investment in employees in terms of their development, providing opportunities to accomplish their job tasks, increasing their awareness of the importance and value of their work, and increasing their sense of the need to achieve success for the organization in which they work.
4. Working to create a good atmosphere that links the goals of the employees, the organization and the community in a way that achieves the highest possible performance on the one hand, and achieving CA on the other hand.
5. The need for organizations affiliated with this sector to pay attention to information technology, as most organizations are gradually moving towards using computers and its programs in order to save time and improve performance.
6. The need for organizations to apply information technology and its role in improving the quality of service provided on the one hand, and achieving CA on the other hand. This is in addition to achieving employee and customer satisfaction, and achieving profits, which ultimately leads to enhancing the organization's marketing position.
7. The need to create the regulatory environment for the development of the digitization system, in terms of training employees, re-engineering operations, and making fundamental changes in the organization's work mechanism, forming a department to prepare and implement the digitization system in line with the nature of work in the organization.
8. The formation of the digitization system through three basic components, which are (1) the system inputs represented in the data processing system, the specialized research and studies system, the data collection system, the financial transactions of the organization, and the economic, social, technological

- and legal environment surrounding the organization, (2) the raw material transfer processes to useful outputs, (3) reports and graphs that reflect the output of the operation of the previous stage, (4) feedback, through which deficiencies or weaknesses in the previous stages are identified in order to correct them.
9. The necessity of involving subordinates in the field of digitization to ensure the success of the digitization process. Workers must also be able to change themselves towards digitalization.
 10. Researchers must analyze digitization better, and business managers can better plan their digitization operations.
 11. The necessity for entrepreneurs in small and medium enterprises to adopt digitization to raise the efficiency of the performance of workers on the one hand, and the performance of projects on the other hand.
 12. Information systems scientists should continue to assess developments related to the role of the digital manager, the role of the head of the information systems department, and the alignment of business and information technology.
 13. Nonprofit decision makers must understand the opportunities and challenges posed by digitalization in order to allow them to formulate a digitalization strategy, which can lead to CA and digital communication with stakeholders.
 14. The need for governments to pay attention to appropriate financing for sustainable development programs and projects, and this requires policy makers to direct and encourage investments in the digital network infrastructure and human capital.
 15. Organizations going through a digital transformation need all the tools necessary to prepare for this change, and it is also necessary for leaders to understand digitalization, and the leader must combine traditional leadership practices and digital leadership to create a hybrid style between them.
 16. The necessity for businessmen to rely on their ability to improve their use of available resources. The study also pointed out how entrepreneurs can become more capable by using the volatility approach in obtaining and using resources in order to improve performance.

12. Conclusion

The subject of digitization has attracted the attention of many researchers due to its great contribution to the development of work systems, and the development and growth of organization. Digitization has also contributed to motivating individuals to achieve better performance on the one hand, and improve the effectiveness of the organization's performance on the other hand. It has become easy to store and retrieve information of all kinds and sizes.

Digitization is the process of transformation into digital formulation, and this requires a shift from traditional methods to electronic preservation systems. This transformation requires identifying the methods that already exist and choosing what suits them with the nature of the environment in which the transformation takes place. The shift to digitization has become a necessity to solve many contemporary problems, the most important of which are the elimination of government red tape, the complexity of procedures, the problems of overcrowding, and the difficulty of retrieval, and this is not commensurate with the orientation to e-government.

Information systems appeared in the organization, which included how to deal with digitization using different types and forms of technology, which led to an increase in the competitive value of organization in increasing digitization and improving and developing their performance.

Digitization has become the common denominator among all daily activities, and it has penetrated all scientific and practical aspects. People have become highly dependent on information and communication technology in all fields of knowledge on the one hand, and communications on the other hand.

Digitization has invaded multiple fields, and it has become called Digital Humanities, which includes other concepts such as digital libraries, visualization, text mining, Geographic Information System, Multimedia, Social Networks, Teaching using technology with Technology, Digital Culture.

The primary purpose of the digital humanities is to promote research and learning, and to create products and processes that aim to update our knowledge. The concept of digital humanities is related to the humanistic institution that works on the use of media and computational theories in the field of humanities research and teaching, such as Text Encoding and Linguistic Computing.

The digital revolution has moved the human being from the world of paper to the intangible world, and the digital age was distinguished from the other by advantages related to size, storage, capacity, the ability to delete and add, and others. Reading has also become more rapid and interactive with others, but it has become more superficial and dispersed in the current era.

Digitization has played an important role in the markets in terms of identifying the needs and desires of customers through technology devices, tracking their habits and desires and searching on the Internet, which made marketing experts precede the desires and needs of customers, as they create a path for their consumption and direct them towards specific purchases.

12. Future Studies

The present study attempts to reveal the dimensions of digitalization and its impact on the dimensions of the DSQ, but the scope of this study, the methods used and its findings indicate that there are areas for other future studies.

Among these research areas are (1) the impact of digitalization on sustainability competitive advantage, (2) the effect of digitalization on sustainable development, (3) the impact of digitalization on environmental sustainability, (4) the impact of digitalization on social sustainability, (5) the impact of digitalization on economic sustainability.

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