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The Impact of Using Technologies and Digital Transformation Tools in Supporting Strategic Decision Making in the Kingdom of Saudi Arabia (A Field Study on a Group of Small and Medium-sized Companies in the Logistics Sector in the City of Riyadh)

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Abstract

The study aimed to identify the impact of using information technologies and digital transformation tools in supporting and making strategic decisions within small and medium-sized companies operating in the logistics sector in the Kingdom of Saudi Arabia, as well as determining the extent to which digital transformation technologies and tools contribute to decision-making within companies and institutions. The study relied on the descriptive analytical method and the questionnaire as a primary tool to collect the data necessary for the study. The study population consisted of (15) small and medium-sized companies, all of which operate in the logistics services sector in the city of Riyadh, Kingdom of Saudi Arabia. The questionnaire was distributed to the respondents, who numbered (140) employees working within the companies under study. After examining the questionnaires, (21) questionnaires were excluded from them because they were not suitable for analysis. Thus, the number of questionnaires suitable for analysis was (119) questionnaires, which were analyzed based on the statistical analysis program (SPSS). The study reached a number of results, the most important of which are: There is a statistically significant effect of using hardware and software, using data, using networks, and developing performance in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia at a significant level ($\alpha \leq 0.05$).

The study recommended several recommendations, the most important of which are: Urging small and medium-sized companies in the Kingdom of Saudi Arabia to seek to develop the digital transformation techniques and tools that they use in response to environmental changes.

Keywords: Technologies and Digital Transformation Tools, Strategic Decision, Logistics sector, Small and Medium-Sized Companies.

أثر استخدام التقنيات وأدوات التحول الرقمي على دعم واتخاذ القرار الاستراتيجي في المملكة العربية السعودية (دراسة ميدانية على مجموعة من الشركات الصغيرة والمتوسطة بالقطاع اللوجستي في مدينة الرياض)

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ملخص الدراسة

هدفت الدراسة الى التعرف على أثر استخدام تقنيات المعلومات وأدوات التحول الرقمي في دعم واتخاذ القرار الإستراتيجي داخل الشركات الصغيرة المتوسطة والتي تعمل في القطاع اللوجستي في المملكة العربية السعودية، وكذلك تحديد مدى مساهمة تقنيات وأدوات التحول الرقمي في صنع القرار داخل الشركات والمؤسسات. اعتمدت الدراسة على المنهج الوصفي التحليلي، وعلى الاستبيان كأداة أولية لجمع البيانات اللازمة للدراسة. تألف مجتمع الدراسة من (15) شركة صغيرة ومتوسطة الحجم تعمل جميعها في قطاع الخدمات اللوجستية بمدينة الرياض بالمملكة العربية السعودية. تم توزيع الاستبيان على المبحوثين والبالغ عددهم (140) موظفا من العاملين داخل الشركات محل الدراسة، وبعد فحص الاستبانات تم استبعاد (21) استبانة منها لعدم صلاحيتها للتحليل وبهذا يكون عدد الاستبانات الصالحة للتحليل (119) استبانة، تم تحليلها بالاعتماد على برنامج التحليل الاحصائي (SPSS). توصلت الدراسة إلى عدد من النتائج أهمها: يوجد أثر ذو دلالة إحصائية لاستخدام الأجهزة والبرمجيات، استخدام البيانات، استخدام الشبكات، وتطوير الأداء في عملية اتخاذ القرار داخل الشركات الصغيرة والمتوسطة في المملكة العربية السعودية عند مستوى دلالة معنوية ($\alpha \leq 0.05$). أوصت الدراسة بعدة توصيات أهمها: حث الشركات الصغيرة والمتوسطة في المملكة العربية السعودية للسعي إلى تطوير تقنيات وأدوات التحول الرقمي التي تستخدمها استجابة للتغيرات البيئية، والاستعانة بالخبراء في مجال تقنيات وأدوات التحول الرقمي للاستفادة منهم من خلال الاستخدام السليم وصيانة أنظمة المعلومات ومكافحة الفيروسات وتعليم وتدريب العاملين داخل الشركات الصغيرة والمتوسطة، وتوفير المعلومات اللازمة لمتخذي القرار بالكفاءة والسرعة المطلوبة.

الكلمات المفتاحية: التقنيات وأدوات التحول الرقمي، القرار الاستراتيجي، القطاع اللوجيستي، الشركات الصغيرة والمتوسطة.

1. Introduction:

Today, the world is witnessing a great growth and widespread of computerized information systems in various areas of life thanks to modern information technology that has produced new applications and modern information systems with superior, innovative, and constantly evolving capabilities, which meet the decision-maker efficiently, effectively and at an appropriate cost, which has the ability to produce information quickly, accurately, and in a more appropriate and timely manner. As for continuity, it is up to those who can exploit this information efficiently and thus succeed in maintaining their competitive position in light of these transformations. With the rapid development in the world of technology and the trend of governments and institutions towards digitization in all their services, The Kingdom of Saudi Arabia has been keen to adopt the concept of government digital transformation by replacing traditional processes with digital ones, and has developed a five-year plans and strategies to ensure the achievement of its goals with quality and efficiency, as it aims to reach an integrated digital government that facilitates all services for beneficiaries. The use of technologies in the workplace has increased dramatically in the past decades. Firms, both large and small, have benefited from the communication and coordination capabilities offered by technologies in the areas of design engineering, production, and sale of goods and services (Colombo and Delmastro, 1999).

Advances in information and communication technology (ICT) have reduced information and communication costs (Milgrom and Roberts, 1990, Garicano, 2000). The introduction of ICT in the workplace has reduced production costs by allowing the automation of routine tasks that are being replaced by computing (Autor et al., 2003). This computerization ensured that the work was carried out as required by the regulatory guidelines and thus reduced human errors in the production process as well as wastage of resources. This reduction in information and communication costs also improved strategic planning and improved strategic communication (Milgrom and Roberts, 1990).

1.1. Problem Statement:

The introduction of information and communication technology, technologies and tools for digital transformation in the workplace has reduced production costs by allowing the rapid completion of routine tasks as a result of replacing them with computing (Autor et al., 2003). Reducing human errors in the production process as well as wasting resources.

This reduction in information and communication costs also led to improved strategic planning and improved strategic communication (Milgrom and Roberts, 1990), which had a positive impact on companies' performance.

Since information is required in any organization for planning, control, decision making, communication, organizing and directing, this can be achieved through the use of a computer, the application of a management information system (MIS), electronic data processing (EDP), office support system, data processing system, and strategic decision support and decision system. In emphasizing the role technology plays in enhancing the economic and commercial activities of both private and public enterprises.

Despite the emergence of a great and increasing development using information technology, techniques and tools for digital transformation in various activities, some small and medium-sized companies in the Kingdom of Saudi Arabia have not been able to deal with this technology in the performance of managing their resources and making strategic decisions in an optimal way.

1.2. Research Questions

Through our presentation of the research problem, the problem can be formulated in the following main question:

- **What is the impact of using technologies and digital transformation tools on supporting and making strategic decisions in the Kingdom of Saudi Arabia?,** several other sub-questions are derived from this question:
  - How do executives, decision makers or stakeholders in enterprises and SMEs in Saudi Arabia understand the uses/roles of technologies and digital transformation tools in strategic decision making?
  - What are the reasons that prevent decision makers or stakeholders in institutions and small and medium-sized companies in the Kingdom of Saudi Arabia from making the most of information technology, its techniques, and the digital transformation tools available in developing and enhancing the performance of institutions? SMEs in Saudi Arabia and making the right strategic decision?
  - Do information technology, digital transformation techniques and tools used affect the development of the performance of small and medium-sized companies in the Kingdom of Saudi Arabia?

- Do information technology, its techniques, and digital transformation tools affect strategic decision-making within small and medium-sized companies in the Kingdom of Saudi Arabia?
- Is there a relationship between decision-making and developing the performance of small and medium-sized companies in the Kingdom of Saudi Arabia?

1.3. Significance of the Study

The importance of the study is as follows:

- The importance gained by the information in this era.
- The importance of the field of technologies and tools for digital transformation at the present time, as it has become a broad field aimed at various institutions
- To use and rely on it in various fields, especially decision-making.
- The study sheds light on the reality of the information system and decision-making in small and medium-sized companies in the logistics sector in the city of Riyadh.

1.4. Research Objectives

The objectives of the study can be summarized in the following points:

- Personal desire to get to know and understand this topic because of its importance.
- Desire to go into the field of employees and benefit from their experience.
- Learn how to actually make decisions within the institutions and companies understudy.
- Knowing the level of modern technology and the effectiveness of the decision-making process.
- Introducing companies and institutions to the importance of using technologies and digital transformation and their role in achieving growth and development.
- Awareness of the importance of the topic.
- Relevancy of the topic to the field of specialization.

1.5. Research Hypothesis

There is no statistically significant effect between information technology, digital transformation tools, and the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia. Several sub-hypotheses branch out from the main hypothesis, as follows: A group of sub-hypotheses is branched from this main hypothesis as follows:

- There is no statistically significant impact of the use of hardware and software in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia.
- There is no statistically significant effect of using data in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia.
- There is no statistically significant effect of using networks in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia.
- There is no statistically significant impact of performance development on the decision-making process in small and medium-sized companies in the Kingdom of Saudi Arabia.

2. Theoretical Framework

2.1. Information Technology

The concept of development, which has greatly affected business operations, is the emergence of the information age. Advances in information technology, technologies and tools for digital transformation have made it possible to convert information into digital information and can be processed and managed faster and cheaper. (Ovia, 2003) Walsham in International Encyclopedia of Business and Management (1996), Information technology and digital transformation technologies and tools are used to include both computers and telecommunications technologies, software, and associated operating systems.

Information technology and digital transformation techniques and tools can be defined on the basis of the devices used by:

- Information technology, and digital transformation techniques and tools are techniques used in all fields, starting from equipment and software to the techniques used in the field of communication (Faleh Al-Houry, 2004).
- It is also information technology, techniques and tools for digital transformation, which are all types and patterns of software, hardware, and equipment related to computer and communication (Al-Rahman Al-Sabah, 1998).
- Information technology, techniques and tools for digital transformation are the automated and electronic systems for dealing with information, and they include computing and communication means and the resulting integration of high-tech media, generally expressed in the computer system (Youssef Al-Tai, 2009).

- It can also be defined through the definition based on activities and devices. Information technology, techniques and tools for digital transformation are defined from this angle as a broad launch of capabilities, components and various elements in storage, processing, retrieval and distribution of data and information, as well as its role in securing knowledge required, which is the product of the combination of system, communication networks, knowledge and technology (Ibrahim Amer, 2005).

2.1.1. The basic functions of information technology and digital transformation techniques and tools and digital transformation techniques and tools

Information technology, technologies and tools for digital transformation and communications perform five basic functions represented in collecting information, sending it, storing it, processing it, and showing it when needed using many means, tools and systems.

2.1.2. IT components, technologies and tools for digital transformation

The following figure clearly shows the components of information technology, techniques and tools for digital transformation and communications, as it includes all hardware and software for storing, data processing, and various communication tools, whether modern or traditional methods developed such as telephone and digital television, which have become working with modern tools and programs, in addition to containing Local or international networks that help transfer information between many parties.

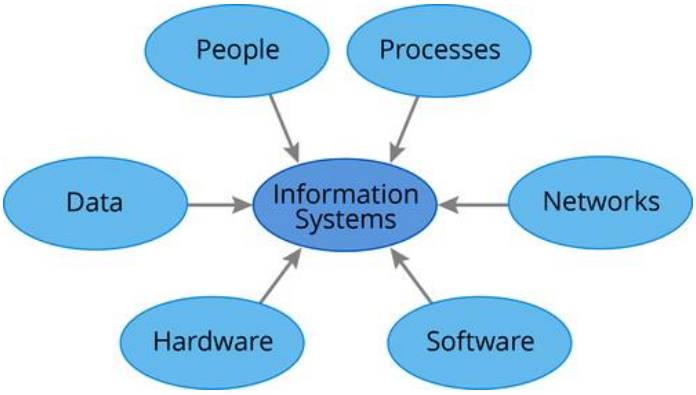

Figure - 1 - IT components, technologies and tools for digital transformation

2.1.3. Technological requirements for information systems

To build information technology, technologies and tools for digital transformation and operate them efficiently, there must be some technological requirements for this process. Which are the

requirements that it must be available in the information technology used in the organization, **they include:**

- Availability of new and qualified hardware and other physical devices and business software to carry out the activities and business of the organization smoothly and efficiently.
- Provides advanced systems to assist in the decision-making process. Where large analytical capabilities and mathematical models must be available to reach the best decisions. Among these systems - decision support systems and expert systems.
- Huge databases or data warehouses must also be available and easily accessible, as the decision-making process needs a huge amount of information and data and analysis to get the best results.
- Availability of communication networks that facilitate the communication process in the institution internally between its departments and interests. And externally between the institution and its suppliers and customers, which may distinguish it from its competitors and facilitate dealing with these parties and institutions, which benefits them in their work and provides them with different information about the environment.
- The ability to link the different systems together, that is, how to link the different networks within the organization together and thus provide consistent information systems at the level of the institution as a whole. This prevents conflict and difference problems in the organization's systems and facilitates the provision of information to the organization in all its parts.

The technological requirements of information technology and digital transformation techniques and tools show that a sound technological infrastructure must be available, including databases, communication networks, hardware components and software. Any lack of this infrastructure will cause problems and hinder these systems.

2.2. Decision making concept

There are many terms that define the decision-making process, one of which is the process of careful selection of an alternative from among a group of alternatives so that this alternative achieves the maximum return using the same resources (Mohamed Al-Hourani, 2013). A situation that requires that, after studying the expected results of each alternative and their impact on achieving the required goals within the data of the regulatory environment (Abdul-Hussein

Salameh, 2005), decision-making is a choice between different alternatives and this meaning is consistent with the nature of many situations, so that we find that the decision-maker is always in A situation that asks him to choose a specific alternative from among the alternatives before him (Walid Ismail, 2007), the decision-making process, which (Murray) defines as the process through which the choice is made between alternatives in order to achieve the goals of the organization. While (McClorry) defines it as the process related to obtaining, controlling and using information to achieve some goals, while (Ali Al-Sharif, 1997) has another definition, which is the decision is nothing but the choice of one of these different alternatives for human behavior or behavior.

The decision-making process is the core of the administrative function, as managers, decision makers and stakeholders spend most of their time in it in their continuous attempts to achieve the goals of the organization (Fikry Al-Amin, 2016). Decision-making is the basis of administrative work, which consists in conducting studies of the consequences of each alternative and choosing the optimal alternative, and since the effectiveness of the decision is to provide a set of basic elements that decision-makers can work to provide, depending on a set of functions, including providing and providing necessary information. And since the latter is necessary for the decision-making process, it is necessary to use information systems with advanced technologies and have the ability to provide all the necessary information, as it has a relationship that affects the decision-making process within small and medium companies.

2.2.1. Characteristics of the decision-making process

- It is a mental process; it is an intellectual activity that depends on following logic and correct systematic thinking.
- It is a procedural process. Although the selection process is the essence of decision-making, there are a number of detailed steps that precede it.
- The multiplicity of alternatives is the basis of the decision-making process. When there is only one solution to a particular problem, there will be no choice, and then there will be no decision-making process, but rather it is mandatory.
- The choice of alternatives is not random, but is based on principles and criteria that lead to the selection of the most appropriate alternative.
- We do not choose the optimal alternative, because idealism is far from reality, and it may not suit the circumstances on which the decision is made. Therefore, the choice is directed to

the most appropriate alternative, which is commensurate with the circumstances affecting the decision-making.

- 6. The decision-making process is linked to the future. We take decisions in the present, but the implementation of the decision and its effects will be in the future (Ahmed Maher, 2003).

2.2.2. Stages of the decision-making process

The decision-making process consists of five successive stages that build on each other and the results of each affect the next stage. **These stages are as follows:**

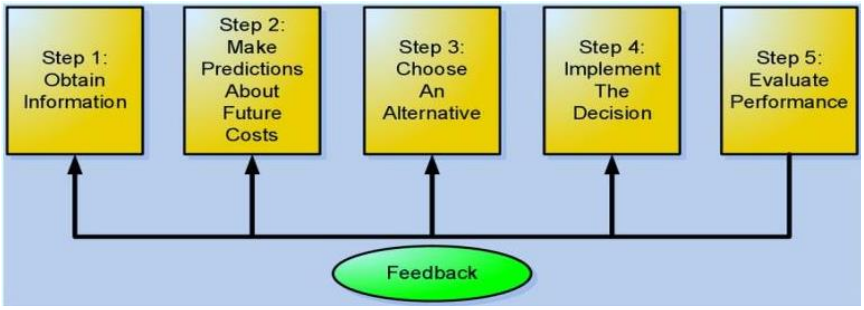

Figure - 2 - Stages of the decision-making process

- **Feeling and Defining Need:**

The need for decision-making arises when the individual feels ambiguity or unease about a particular activity, or feels that there is a gap between the level to be achieved in something and the level actually achieved, or when the individual feels that there is a mistake that needs to be fixed or there is a need to return to the need for balance that existed in an order of things. Or when you feel that an opportunity may be missed if the decision is not made, feeling the emergence of a deviation in the actual production from the goals set, for example, means that there is a problem that requires taking a decision to correct these deviation new goods and so on. The individual's feeling of the problem invites him to diagnose it, so he begins to strengthen his or her sense of the problem and to identify the size of the gap expected to occur if the decision is not made, and then searches for the causes of this gap and the difficulties that stand in the way of achieving the goal, and then places the problem within the general framework of the facility or within the higher goals that must be achieved. This diagnosis may be easy in some cases for which specific criteria can be set. When the doctor visits the patient, he does not face a big problem in comparing him with his requirements of good health, because the criteria of ideal health are known to him and therefore it is easy for him to identify the extent of the gap between the patient's health and good health,

and then seeks to discover the reasons that led to the occurrence of this gap. Either in the case of organizations, the matter may be difficult due to the absence of recognized standards, so the problem is diagnosed with a feeling, that there is something abnormal or that there are better opportunities to improve the situation, and then it must be sought.

2.2.3. Looking for alternative solutions:

The process of searching for solutions depends on the degree of complexity of the problem. The more complex the problem, the longer the search process takes and to collect sufficient data on the available alternatives however, it is almost impossible from a practical point of view for the decision maker to take into account all the possible alternatives, so we find that most decisions It is taken based on a specific number of possible alternatives, so we find that most decisions are made based on a limited number of alternatives without full knowledge. A satisfactory alternative is found or until it is believed that the expected benefit is not up to the level of cost to which it will be borne.

2.2.4. Evaluate the alternatives:

Most cases and problems have more than one solution, and the administration must study all the alternatives. At this stage, these alternatives are reviewed and the main differences between them are identified, then evaluate each alternative and study the results of choosing each of them in preparation for choosing the alternative that achieves the best result. The consequences of each alternative are usually considered in terms of quantity and quality. Quantitative factors such as raw materials, wages and overheads can be expressed in monetary form and taken into account when calculating costs, while qualitative factors such as the relationship with suppliers are difficult to express in the form of certain numbers despite It may outweigh the quantitative factors in terms of importance, as the management may sometimes reject a decision to manufacture spare parts and buy them ready-made from one of the suppliers on which the organization relies in purchasing very important goods, even though the cost of their production in the organization is less than the cost of purchasing them from this supplier, in order to Maintaining an intimate relationship with the supplier and seeking to enhance communication links for considerations that go beyond the high cost.

In order to calculate the expected costs and revenues for each alternative, a distinction must be made between fixed costs, variable costs, fixed revenues, and variable revenues, as each has a different impact.

Also, the individuals who will be entrusted with the implementation of decisions should not be ignored, especially if human capabilities represent the decisive factor in implementing some alternatives. However, it must be recognized that no matter how much effort is made to control these changes, the possibility of error is present, or these estimates will not reach the degree of facts or may enter an element Imagination and administrative judgment as an alternative to compiling and monitoring a measure of principles, knowledge and administrative relations.

2.2.5. Choose one of the alternatives:

The locality of choosing one of the alternatives is the essence of decision-making, and that the previous steps are helpful to this step, and this step is usually not done until after balances are returned to all the factors and opinions related to the problem, especially since the choice means that the organization bears its excitement and future results.

The selection may be made on a trial basis for a limited period of time before the decision is circulated, as if the administration decides to implement the new advertising campaign in a limited area. If it proves successful, it will be circulated to all regions or a new accounting system is applied under the supervision of a consulting company until the difficulties that may appear are overcome, during the application, thus allowing benefiting from these experiences and making adjustments by making the necessary correction and addressing the negatives and unexpected situations before the full implementation of the chosen alternative.

Sometimes it may happen that the decision taken is not to take a decision, i.e. to maintain the status quo, and usually this happens if the management finds that the presented issue is not appropriate now, or that it is appropriate, but there is a lack of information on which to base the final decision. This type of selection is called negative decisions to distinguish them from positive decisions in which the best alternatives are chosen with the aim of doing something or stopping or preventing a certain action.

2.2.6. Implementation of the decision and knowing the consequences:

Putting the chosen alternative into practice requires preparing sufficient instructions and directives to inform subordinates of its removal and to understand its technical aspects. The administration must always remember that a person hates change. Efforts must be made to convince workers of the benefits of the new program in order to gain their trust and cooperation in implementation. It may lead to the failure of the decision or its failure to implement it as required.

Knowing the consequences of a particular decision requires a time when the decision has been put into practice and its true results appear. If the results indicate the correctness of the decision, the matter does not harm the matter, but it should be the subject of study and periodic review so that additional improvements can be made that may increase its effectiveness or rationalize making similar decisions in the future. Release as long as other alternatives have not been put into practice and their validity has not been tested. For this reason, it must always be taken into account that there is still unknown information or it was not accurately predicted.

2.2.7. The importance of information technology and administrative digital transformation techniques and tools in decision-making

Providing management at its various levels with the necessary information and appropriate knowledge is the basis of the forecasting and decision-making process. The suitability of the information according to the person presented to it, some people may be satisfied with summaries and some may want to know the details, some are suitable for mathematical and statistical equations and graphs, and some prefer numerical tables and long reports.

The provision of sound information to the various administrative units has become one of the necessities of decision-making in this era. Rather, other administrative units have become in the appropriate manner and at the right time so that these units can take their decisions in the right manner, and that the need for a system for collecting and analyzing data has led to interest in the management information system. It should be noted that the comprehensive analysis and taking all the steps required to make the decision is rarely done by one person, but rather it is not desirable for one person to do it, as there is an urgent need to benefit from the experience and wisdom of most of the organization's employees in the analysis and weighting of positions with the same amount of need for their energies in collecting Classifying data and information. Predicting the exact outcome of each alternative is often beyond the power of any single person.

2.3. Factors that justify the need for an information system as a basis for decision-making

The availability of information to the institution is an important thing, and the degree to which the value of this information is benefited is more important. The institution is able to obtain information of value and credibility if it is really aware of its importance and work to provide an effective information system in the institution that makes it control the process of making decisions related to all aspects of the activity.

Productive or marketing and not to make random decisions about the market or production policy within the institution, and the information system in the institution must ensure the transmission of information within the institution between different people, groups and interests, but also with all dealers, customers and clients ... etc. in order to facilitate good reading For the various standards and settings of management within the institution. Therefore, the institutions' need for modern and flexible technology that dispenses with manual work and makes them in constant contact with the customer to meet his needs and listen to his suggestions has become inevitable in light of the multiplicity of options, alternatives and opportunities available to him by competitors as a result of the global openness of markets. The diversity of information systems pillars in various activities increases by facilitating the process of linking all operations with each other, especially with regard to modern technology based on the rapid exchange of information in the least time and in all circumstances.

In addition to the previous level, the institution relies in making decisions in an important way on information technology, such as the production process, which requires advanced hardware and software to control the manufacturing process or what is known as computer-based manufacturing, and thus the machine has become compensating the worker even in routine work, so we find that the level of technology available The institution has considerations in the decisions that the institution may take in its course, such as increasing the production capacity or introducing some new designs on the product. All of this depends on the availability and use of this technology, as well as its impact on other levels such as the storage and management process. Managing its stocks and ensuring that they do not fall into interruptions related to basic materials in the production process and other different aspects of the institution.

- Changes in environmental forces:
- The emergence of the global economy:
- Transformation in industrial economies:
- Manager's Time Limits:
- Growing customer discontent and dissatisfaction:
- Deficit in energy and natural resources available to business organizations.

3. Previous Studies

Study (Averdita Prisha Shaqiri, 2017). "The Impact of Information Technology on Corporate Decision Making in Kosovo"

The study concluded that when making a decision, the decision maker faces unambiguous, doubtful and dangerous situations, fear of decision-making and other limitations that can make the decision-making process difficult, slowing down or disrupting it. In order to make quality decisions in such circumstances, it is necessary to extract timely information, conduct an assessment of potential solutions and analyze the impact of the environment with a view to arriving at a positive outcome. Since every decision brings changes, the choice of a timely decision among the possible solutions will be reflected in the short or long term on the further course of actions of the decision makers in relation to the results. Separating important data and information from less important information and being able to make accurate and timely decision is different from unsuccessful of successful decision makers. Therefore, the decision maker must be aware of new technologies and recent trends and be prepared to face the challenges of the day.

The original role of computer systems is to collect, process, store, and make available data and information for future use and sharing. The data and information needed to determine the available decision possibilities are available to the decision maker by simplifying the choice by converting them to new opportunities, knowledge, and future development opportunities among the new values. As the decision maker makes the final decision, new technology also plays an important role in the private and business decision-making process by providing assistance in calculating a greater choice of possible solutions. By analyzing the problems and consequences of choice, predicting future outcomes of choice, reducing fear in decision making, simplifying decision making, new capabilities in the way of thinking and choosing solutions, creating new value. The role of new technologies in private and business decision-making is repeated. Since new technologies primarily affect the development and emergence of new tools, models, methods, techniques and systems tailored to the requirements of customers and decision-makers, but also the types of decisions that need to be made, there is a requirement that modernization and use continue in the future in order to improve and simplify the decision-making process.

A study (Aina, 2016) entitled: "The Impact of Management Information Technology on Decision Support Capabilities: A Conceptual Model"

It has been reported that information technology is beneficial to the company's operations from various points of view. One of the obvious benefits of information technology is noted in terms of its contribution to the decision-making process. Several studies have discovered a positive relationship while analyzing the impact of information technology on decision-making.

Information technology is believed to enhance the process of decision-making capabilities. A review of the previous literature shows evidence from various studies that support IT management in contributing to the role of decision-making capabilities. However, most of the paper lacks in identifying the critical importance of speed and quality of information in supporting the role of decision-making capabilities. In particular, problem identification and problem analysis in facilitating the role of information technology have not been studied to a great extent. Furthermore, decision-maker satisfaction, information content, and quality of access to information have not been critically analyzed and studied.

A Study (Mirjana Radovic-Markovic, 2015). "The Role of Information Management in Decision Making and Business Success"

The study found that the essence of information management in organizations is to help solve the problems of institutional growth, development and productivity by optimizing the use of resources in a suspended and dynamic environment that is steadily growing more complex. Information is the core of management functions, and thus is an integral part of the meaning and accomplishment of organizational operations. A database is a major component of a management information system. When a database currently exists as part of a management information system, the data preparation step can be greatly simplified and, as a result, the use of a mathematical model can often be justified by virtue of the fact that the data needed by the model is readily available. To take advantage of most of the quantitative patterns available for management decisions, we need data describing the situation under study. When applying inventory models, such as the economic order quantity model, we hope to use a management information system database to find the holding cost, order processing cost, and annual demand for each product we may want to analyze. As both MIS and mathematical models strive to provide information that aids decision-making, it makes sense that the greatest contribution to decision-making in contemporary organization should be made through the integration of quantitative analysis and MIS. Finally, it can be concluded that effective use of information systems in making managerial decisions gives authority to managers and helps organizations succeed (Namani, 2010) so it would be good for these managers to embrace change as it is inevitable by listening to their voices employees, adjusting long-term goals to stay relevant in the global marketplace, and focusing on data-driven decisions and results-based practices.

A study (Berbach Abh, 2015) - entitled - The use of information technology and its relationship to the quality of work conduct at the Institute of Science and Technology of Physical and Sports Activities.

The study aimed to identify the nature of the relationship between the use of information technology and the quality of work procedure within companies, and to identify the nature of the relationship between the use of information technology and mechanisms for implementing work procedures, and the nature of the relationship between the use of information technology and information management, as well as the process of communication and communication with performance evaluation. Among the most important findings are those: There is a statistically significant relationship between the use of information technology and information management in the companies under study, and there is a statistically significant relationship between the use of information technology and mechanisms for implementing work procedures within these companies.

4. Research Methodology:

4.1. Study Approach:

Research design is critical because it determines the success or failure of the research. The research design directs the logical arrangements for data collection and analysis so that conclusions can be drawn. Thayer in Devos and Fouche (1998) defines research design as a blueprint or detailed plan for how a research study will be conducted collecting data, measuring variables, selecting a sample of interest for the study, and collecting data for use as a basis for hypothesis testing and analysis of results.

The research was prepared for this study in Riyadh, the capital of the Kingdom of Saudi Arabia. She is also known as the beating heart of Saudi Arabia due to her multi-cultural and multi-business. Riyadh was chosen for this study because of its dominance over economic activities. There are many small and medium businesses in Riyadh as it is the largest city in the country. The city houses many commercial organizations and small and medium businesses by virtue of being the capital.

The study adopted the descriptive analytical method and adopted a case study design. This is in line with the nature of the research and considering the descriptive analytical method based on data collection and classification. It aims to study as it really is and is interested in describing it

thoroughly; it expresses it qualitatively and quantitatively and highlights all its aspects. The descriptive approach is defined as the method that the researcher relies on to obtain adequate and accurate information to visualize the social reality (Damji, 1999), while (Alyan & Ghoneim, 2000) define the descriptive approach as the method that studies the current situations in terms of their characteristics and forms and Olavnha and factors influencing it.

The case study was approved, as the focus of the study was on a group of small and medium-sized companies operating in the logistics sector in Riyadh, the capital of the Kingdom of Saudi Arabia. The case study allowed in-depth data collection with focus.

4.2. Sources of data:

Data is defined by Polit and Hungler (1999) as information obtained in the course of the study. The study made use of primary and secondary data sources. The primary data for any study is the data that was collected directly by the researcher for a specific purpose, while the secondary source of data is defined as that data that has already been collected not for a particular study, but the researcher resorts to these data for his study.

4.2.1. Primary data:

Primary sources of data are first-hand information. The data was generated by the researcher for the purpose of this study. Primary data for this study was collected through observations, questionnaires and interviews. But it was mainly through questionnaires. Questionnaires were submitted to some small and medium-sized companies operating in the logistics sector in Riyadh, Saudi Arabia.

4.2.2. Secondary data:

In addition to the data collected from the primary source, data was also extracted from the records and publications of SMEs operating in the logistics sector in Riyadh, Saudi Arabia, including their annual report, also extracted from books, magazines, internet, trade journals and newspapers.

4.3. Study Population:

Population is the sum or sum of all the elements, subjects or members that conform to a set of specifications (Polit and Hungler, 1999). Given the large number of small and medium-sized companies in the Kingdom of Saudi Arabia and the impossibility of covering them all, the researcher targeted all workers in 15 small and medium-sized companies working in the logistics sector in Riyadh, Saudi Arabia, to represent the study community.

4.4. Study tool

4.4.1. Questionnaires

Which is defined as: "a tool that contains a set of declarative questions or sentences, to which the sample member is asked to answer personally and in the manner determined by the researcher according to the purposes of the research" The sample member answers it, and this person is called (Alyan and Ghoneim, 20001). As for (Kandilji, 2000), the questionnaire is defined as a set of different questions and inquiries related to each other. In order to achieve the goals that the researcher is looking for in light of his subject and the problem he has chosen for his research, written inquiries are sent to a group of individuals and institutions that the researcher has chosen as a research sample.

The method used in this research was to answer a set of questions included in the questionnaire specially designed for this study. The questionnaire contained forty closed-ended questions, each of which was measured on a “pentagonal” Likert scale, i.e. of five scores ranging from “strongly disagree” to “strongly agree” to indicate the rate at which sample members feel about factors affecting the satisfaction of managers or owners. Attention to the administrative decision-making process within their institutions. The value (1) was given a qualitative assessment “strongly disagree” and the value (5) was given a qualitative assessment “strongly agree” so that the average answers for each statement represented the degree of satisfaction of the sample members with the decision-making process. When this average goes up to approach (5), the satisfaction score of managers and stakeholders is 'very high', and conversely, as this average goes down to approach (1), the managers' satisfaction score is 'very high' low or not found.

4.4.2. Interview

The interview gives the researcher an immediate answer from the respondents who provided supplementary data to the questionnaire.

4.4.3. Note

The physical environment of the companies under study was observed.

4.5. Statistical methods:

To be able to answer the study questions, test its hypotheses and analyze them, the researcher used the following methods of analysis:

- Caronbach alpha analysis test.
- Frequencies and percentages.
- Mean.
- Standard deviation.
- T- Test.
- Simple regression analysis test.

In order to apply the above-mentioned statistical methods and methods to the data obtained from the sample answers, the statistical analysis program SPSS was used.

4.6. Reliability and Validity

4.6.1. Reliability

Reliability is a measure of how well a study actually does what it is supposed to measure, that is, there are no random errors. Lanyon and Goodstein (1982) define reliability as the repeatability or reliability of a measurement. There are many types of reliability, but the two most common are temporal stability or consistency of results over time, and internal consistency, the degree to which individual items on a test, or groups of items, are related to each other or to the total score on a test. Internal consistency is appropriate for this current research.

Paragraphs No.	Stability coefficient (α)
36	0.812

Table 1 - Internal consistency coefficients were evaluated using Cronbach's alpha test

Cronbach's alpha arithmetic is among the most widely used methods for internal consistency checks or searches (Galvan, 2006). This analysis of similar items within the test is calculated in total for the overall scale, considering the degree to which all items measure the same structure (Cronk, 2006). Cronbach alpha scores range from 0.00 to 1.00, with values of 0.75 or higher usually considered to indicate sufficient internal consistency reliability when a single scale is used (Galvan, 2006). Cronbach alpha of 0.812 for this study showed a sign of the reliability of the internal consistency.

4.6.2. Validity

Instrument validity is the extent to which this instrument measures what it is supposed to measure (Polit and Hungler, 1993). Content validity is the degree to which the instrument represents the factors considered. In order to verify the validity of the content, the questionnaires

included a series of questions about the impact of the use of technologies and digital transformation tools on support and strategic decision-making in the Kingdom of Saudi Arabia.

The correctness of the developed content was ensured by consistency in the researcher-administered questionnaire. All questionnaires were distributed to the respondents by the researcher. The questions are formulated in simple language for clarity and ease of understanding. Clear and unambiguous instructions were given to respondents to help them answer the questions. Almost all respondents completed the questionnaires in the presence of the researcher. This was done to prevent respondents from passing the questionnaire on to others to complete on their behalf.

External validity is also guaranteed. Burns and Grove (1993) defined external validity as the generalizability of study results beyond the sample used. All persons contacted by the researcher to participate in the study completed the questionnaires without any hesitation. Furthermore, none of the people contacted by the researcher declined to participate. Therefore, the results can be generalized and in this case all SMEs in Saudi Arabia.

5. Analysis of the Results and Answer Research Questions:

- **There is good use of information technology and digital transformation tools within the small and medium-sized companies in the Kingdom of Saudi Arabia.**

To perform the T-test at the significance level (0.05) and study the significance of the differences between the arithmetic mean and the hypothetical mean, the following two hypotheses were formulated:

- **H0:** There is no good use of IT and digital transformation tools within SMEs in Saudi Arabia.
- **H1:** There is good use of IT and digital transformation tools within SMEs in Saudi Arabia.

One-Sample Statistics

	N	Mean of the sample members	Std. Deviation	Difference between the arithmetic mean of the sample members and the hypothetical mean	Hypothetical mean			
					t	df	Sig. (2-tailed)	Sig.
IT and digital transformation tools	26	3.68	.22	.68	15.61	25	.000	.05

Table 2 - The difference between the arithmetic mean of the sample members and the hypothetical mean.

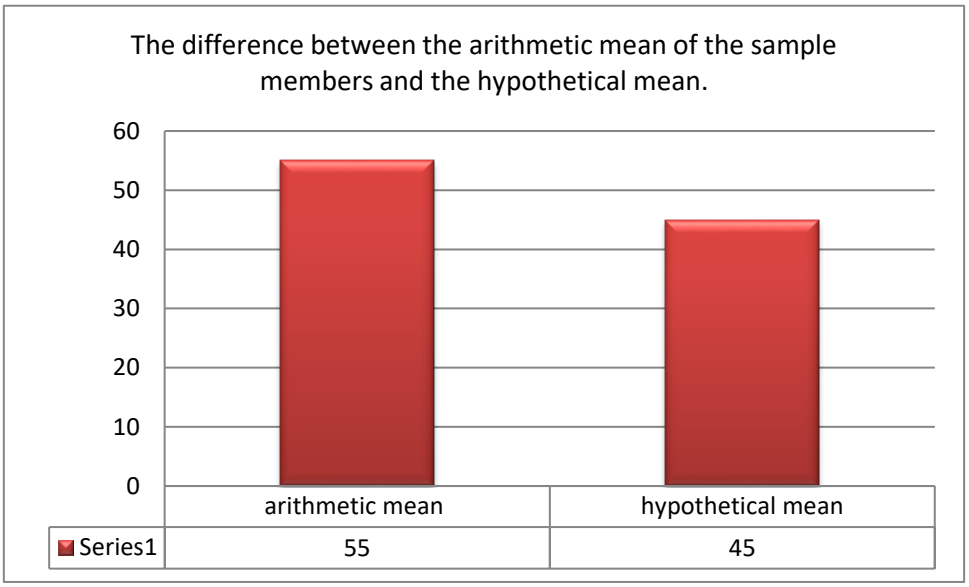

Figure - 3 -The difference between the arithmetic mean of the sample members and the hypothetical mean.

Through the results shown in the table and the attached figure above, we note, based on the arithmetic average of the IT and digital transformation tools axis, which was 3.68, that it is higher than the hypothetical average of 03, This was confirmed by the value of "t" for one sample, which was 15.61, That is, the differences are in favor of the arithmetic mean, which is a positive, statistically significant value at the significance level ($\alpha = 0.05$), and from it the alternative hypothesis “H1” was accepted. Of this result, it is 95% with a 5% chance of error.

5.1. First Hypothesis

The second hypothesis of this study states: “There is a statistically significant relationship between information technology, digital transformation tools, and the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia”, to perform a simple regression analysis test and to study the effect of the independent variable on the dependent variable, the following two hypotheses were formulated:

- **H0:** There is no a statistically significant relationship between information technology, digital transformation tools, and the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia.

- **H1:** There is there is a statistically significant relationship between information technology, digital transformation tools, and the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia.

	Correlation Coefficient	F	Sig.	t	Sig.
information technology tools and digital transformation in the decision-making	Square 0.43 R 0.65	25.70	.000	5.07	.000

Table 3 - Linear regression for IT tools and digital transformation

Through the above table, we note that the value of the correlation coefficient between each of the digital transformation technologies and tools and the decision-making process amounted to (0.65), which is a positive and direct value, meaning that the higher the degrees of digital transformation techniques and tools, the higher the decision-making process within small and medium companies in the Kingdom Saudi Arab , While the value of R Square = (0.43), that is, the techniques and tools of digital transformation explain about 43% of the variance in the decision-making process, and this was confirmed by the value of (F), which reached (25.70), which is a value of a statistical function at the level of significance (0.05) , This indicates that the regression is significant. Looking at the value of (t) we note that it reached 5.07, which is a statistically significant value at the significance level (0.05), The null hypothesis that the effect exists is rejected and the alternative hypothesis is accepted that "There is a statistically significant relationship between information technology, digital transformation tools, and the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia".

5.2. The first sub-hypothesis

The first sub-hypothesis of this study states: “There is a statistically significant effect of using hardware and software in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia”, to perform a simple regression analysis test and to study the effect of the independent variable on the following two hypotheses were formulated:

- **H0:** There is no statistically significant effect of using hardware and software in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia.

- **H1:** There is a statistically significant effect of using hardware and software in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia.

	Correlation Coefficient	F	Sig.	t	Sig.
Hardware and software in the decision-making	Square 0.23 R 0.48	10.46	.000	3.23	.000

Table 4 - Linear regression for hardware and software

Through the above table, we note that the value of the correlation coefficient between each of the hardware and software and the decision-making process amounted to (0.48), which is a positive and direct value, meaning that the higher the degrees of hardware and software, the higher the degrees of the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia, Whereas, the value of R Square = (0.23), meaning that hardware and software explain about 23% of the variance in the decision-making process, and this was confirmed by the value of (f) where it reached (10.46), which is a value of a statistical function at the significance level (0.05), This indicates that the decline is significant.

Looking at the value of (t), we note that it reached 3.23, which is a statistically significant value at the significance level (0.05), And from it, the null hypothesis that denies the existence of the effect was rejected and the alternative hypothesis was accepted that “there is a statistically significant effect of the use of hardware and software in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia.”

5.3. The second sub-hypothesis

The second sub-hypothesis of this study states, "There is a statistically significant effect of using data in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia", to perform a simple regression analysis and to study the effect of the independent variable on the dependent variable. Formulate the following two hypotheses:

- **H0:** There is no statistically significant effect of using data in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia.
- **H1:** There is a statistically significant effect of using data in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia.

	Correlation Coefficient	F	Sig.	t	Sig.
using data in the decision-making	Square 0.43 R 0.66	26.61	.000	5.15	.000

Table 5 - Linear regression using data

Through the above table, we note that the value of the correlation coefficient between each of the data and the decision-making process amounted to (0.66), which is a positive and direct value, meaning that the higher the degrees of the data, the higher the degrees of the decision-making process within the small and medium-sized companies in the Kingdom of Saudi Arabia, whereas the value of R Square = (0.43), meaning that the data explain about 57% of the variance in the decision-making process. This was confirmed by the value of (f) which reached (46.57), which is a value of a statistical function at the level of significance (0.05), this indicates that the decline is significant.

Looking at the value of (t), we note that it reached 6.82, which is a statistically significant value at the significance level (0.05), Hence, the null hypothesis that denies the existence of the effect was rejected and the alternative hypothesis was accepted that "there is a statistically significant effect of using data in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia".

5.4. The third sub-hypothesis

The third sub-hypothesis of this study states that "there is a statistically significant effect of networks in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia, to conduct a simple regression analysis test and to study the effect of the independent variable on the dependent variable, the following two hypotheses were formulated:

- **H0:** There is no statistically significant effect of using networks in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia.
- **H1:** There is a statistically significant effect of using networks in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia.

	Correlation Coefficient	F	Sig.	t	Sig.
Employees Performance	Square 0.57 R 0.76	46.57	.000	6.82	.000

Table 6 - Linear regression using data

Through the above table, we note that the value of the correlation coefficient between each of the networks and the decision-making process amounted to (0.76), which is a positive and direct value, meaning that the higher the degrees of the networks, the higher the degrees of the decision-making process within the institution, Where the value of R Square = (0.57), that is, the networks explain about 57% of the variance in the decision-making process, and this was confirmed by the value of (f) which reached (46.57), which is a value of a statistical function at the level of significance (0.05), Which indicates that the regression is significant.

Looking at the value of (t), we note that it reached 6.82, which is a statistically significant value at the significance level (0.05), Hence, the null hypothesis that negates the effect was rejected and the alternative hypothesis was accepted that "there is a statistically significant effect of using networks in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia".

5.5. The Fourth sub-hypothesis

The Fourth sub-hypothesis of this study states: “There is a statistically significant impact of performance development in the decision-making process of small and medium-sized companies in the Kingdom of Saudi Arabia."

- **H0:** There is no statistically significant impact of performance development in the decision-making process of small and medium-sized companies in the Kingdom of Saudi Arabia.
- **H1:** There is a statistically significant impact of performance development in the decision-making process of small and medium-sized companies in the Kingdom of Saudi Arabia.

	Correlation Coefficient	**F**	**Sig.**	**t**	**Sig.**
Employees Performance	Square 0.50 R 0.71	34.76	.000	5.89	.000

Table 7 - Linear regression using data

Through the above table, we note that the value of the correlation coefficient between the performance of each of the performance development and the decision-making process reached (0.71), which is a positive and direct value, meaning that the higher the degrees of performance development. the higher the degree of decision-making within small and medium-sized

companies in the Kingdom of Saudi Arabia, while the value of R Square = (0.50), that is, the performance of workers explains about 50% of the variance in the decision-making process, and this was confirmed by the value (f) that It reached (34.76), which is a statistically significant value at the level of significance (0.05), which indicates that the regression is significant. .

Looking at the value of (t), we note that it reached 5.89, which is a statistically significant value at the significance level (0.05), from which the null hypothesis that denies the existence of the effect and the alternative hypothesis were rejected. It was recognized that "there is a statistically significant impact of performance development in the decision-making process of small and medium-sized companies in the Kingdom of Saudi Arabia".

6. Discuss the Results:

6.1. Results:

After presenting the various aspects of the subject in its theoretical and applied form, we have come to prove the pre-established assumptions as follows:

- There is statistically significant effect between information technology, digital transformation tools, and the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia.
- There is statistically significant impact of the use of hardware and software in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia.
- There is statistically significant effect of using data in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia.
- There is statistically significant effect of using networks in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia.
- There is statistically significant impact of performance development on the decision-making process in small and medium-sized companies in the Kingdom of Saudi Arabia.

6.2. Conclusion:

Through this research we tried, accurate exposure to everything related to technologies and tools for digital transformation and its role in the decision-making process in small and medium-sized companies in the Kingdom of Saudi Arabia. After the study, **we reached the following results:**

- Small and medium businesses in the Kingdom of Saudi Arabia rely on digital transformation technologies and tools to an acceptable and appropriate degree.

- The use of digital transformation technologies and tools in small and medium-sized companies in the Kingdom of Saudi Arabia increases the accuracy of information.
- Digital transformation techniques and tools are highly efficient in collecting, storing and retrieving information.
- Digital transformation technologies and tools help in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia
- It was found that there is a statistically significant relationship between the techniques and tools of digital transformation and the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia.
- It was found that there is a statistically significant effect of using hardware and software in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia.
- It was found that there is a statistically significant effect of using data in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia.
- It was found that there is a statistically significant impact on the performance of employees in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia.
- It was found that there is a statistically significant effect of using networks in the decision-making process within small and medium-sized companies in the Kingdom of Saudi Arabia.
- The level of importance for the resources of digital transformation techniques and tools within small and medium-sized companies in the Kingdom of Saudi Arabia was high from the point of view of the study sample
- Decision makers within SMEs in Saudi Arabia have an acceptable level of education.
- Decision makers in small and medium-sized companies in the Kingdom of Saudi Arabia have sufficient experience in the sector.
- The average age of decision makers within small and medium-sized companies in the Kingdom of Saudi Arabia tends to be in the middle age groups (from 30 to 40 years).

6.3. Suggestions:

- Companies in general, and small and medium-sized companies in the Kingdom of Saudi Arabia in particular, should seek to develop technologies and tools for digital transformation that they use in response to the changes in the environment.

- Making digital transformation technologies and tools more appropriate and responsive to users' requirements.
- Working on developing and modernizing work equipment, this certainly applies to all employees.
- Intensification of training and training courses, and make it periodically to increase the efficiency of users of the systems.
- The use of experts in the field of digital transformation techniques and tools in order to benefit from them through the proper use and maintenance of information systems, fighting viruses, educating and training other workers within small and medium companies in the Kingdom of Saudi Arabia.
- Work to provide the latest programs and systems to assist in the decision-making process.
- Providing the necessary information to decision makers with the required efficiency and speed.

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