

Mid ocean University

College of management

Specialization of project management



**The impact of information technology on the success of projects,
an applied study on the Tawakkalna program during Covid - 19**

Preparation

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Introduction

Today's environment is witnessing dynamic, changing competition through the tremendous and rapid development in technology and communications, which has turned the world into a small village whose markets are opening up to each other, and where the intensity of competition is increasing, which has made companies seek to develop their operations and systems to improve outstanding performance, improve and enhance the sustainability of their competitive positions and achieve competitive advantage. This confirms the necessity of keeping pace with rapid and massive technological changes through the application of appropriate systems and technologies. (Khabarat, 2021).

The wide spread of technology and information technology has enabled the introduction of innovative tools and means in the field of project management, starting, planning, implementing, monitoring, closing, and confronting the various structural and functional changes that the environment faces. Among these tools is information technology, which is one of the most important main areas of technology and information technology. (Badawi, 2019).

Information technology and information technology are a tool for coordinating and supporting the administrative processes of projects and making decisions, improving and activating the movement of internal and external communications for the project, obtaining speed of response when performing tasks, and providing many capabilities such as: the information network, the browsing program, the internal network, data extraction, and data warehouses. which facilitates and

accelerates the management of project operations and makes them more flexible and responsive to surrounding variables and achieving the requirements of different stakeholders. (Saqr, 2020).

Hence, this study came to investigate the impact of the use of information technology and information technology on the success of projects, by applying it to the Tawakkalna application during the Corona period and its spread around the world in planning, organizing, implementing and controlling the various processes and activities of project management, and in ways that give it flexibility towards variables and influences that may stand in its way. To increase its ability to seize available opportunities and confront threats in order to overcome them or reduce their impact, and to achieve high performance rates in the face of competition, in order to achieve its goals of survival, growth and profitability. (Hawamdeh, 2022).

Information technology has a significant impact on the success of projects in various fields, including health applications. In light of the COVID-19 pandemic, the use of information technology has become more important than ever. One of the successful applications in this regard is the “Tawakkalna” program, which was developed in Saudi Arabia to deal with the challenges of the Covid-19 pandemic.

The “Tawakkalna” application is a technical application that aims to facilitate dealing with the Covid-19 pandemic and provide health services in a safe and effective manner. The program provides a wide range of features, including tracking cases infected with the virus, providing important information about the epidemiological situation, identifying risk areas, and communicating with competent health authorities. (Al-Hiyari, 2022).

Information technology contributed to the success of the “Tawakkalna” application in several ways. First, using the application allows tracking cases infected with the virus and providing epidemiological data quickly and accurately, which helps in making basic health decisions. Second, it provides seamless communication between users and relevant health authorities, facilitating the transfer of vital information and coordination of efforts. Third, the software provides necessary services to users such as appointment booking and medical inquiries, which enhances patients' experience and improves healthcare. IT and its health applications arguably play a crucial role in the success of projects during the COVID-19 pandemic. The “Tawakkalna” application is a clear example of how technology can be used to enhance healthcare and facilitate dealing with the challenges of the pandemic. (Abu Taha, 2021).

Research problem

The massive and rapid technological revolution and its complexity, openness to global markets, breaking down barriers, changing laws, and easy flow of capital, require projects operating in the information and communications technology sector to develop themselves in a way that suits the new environment, which calls on them to pay attention to developments in the health sector, to strengthen their position. Competitiveness, developing intellectual and technical resources and capabilities, reducing operational costs, shortening cycle time, increasing the speed of developing new products and new markets, improving product quality in order to meet customers' needs and gain their loyalty, thus expanding market share, increasing profits and achieving success.

Hence, the purpose of this study is to study the impact of the use of information technology on the success of projects in the health sector by applying it to the Tawakkalna application for smart phones during the Corona period.

Research questions

- To what extent is information technology used (elements and characteristics) in the health sector?
- How successful are projects in the health sector?
- Is there an impact of information technology in its two dimensions (elements and characteristics) of information technology on the success of projects in its dimensions of survival, growth, and profitability in the health sector?

Research aims

- Studying the potential impacts of implementing risk management on sustainability in food supply chains in the Kingdom of Saudi Arabia. This includes analyzing potential risks facing food chains and how they impact environmental, economic and social sustainability.
- Evaluate the effectiveness of current risk management practices in food supply chains in the Kingdom of Saudi Arabia. This includes analyzing the tools and procedures used to deal with risks and assessing their impact on sustainability.
- Providing practical recommendations to improve risk management practices and enhance sustainability in food supply chains in the Kingdom of Saudi Arabia.

- Enrich scientific knowledge about risk management and sustainability in food supply chains.

Research importance

This study derives its importance from several points, including:

- We are now living in the age of knowledge, and the health sector is considered one of the active sectors in project management, and contributes increasingly and significantly to their effectiveness. It has become one of the factors that determine the failure or success of projects.
- The reliance of government organizations in general and project management in particular on computers and computer-based information systems makes it necessary to carefully analyze their impact on performance because this technological pattern differs from traditional patterns of performance.
- Studying the impact of the use of information technology on the success of projects in its dimensions in the health sector.
- Studying the impact of the use of information technology on the survival of projects in the health sector.
- Studying the impact of the use of information technology on the growth of projects in the health sector.
- Studying the impact of the use of information technology on the profitability of projects in the health sector.

Research hypotheses

In light of the problem of the study and its elements that seek to achieve it, the researcher formulated the following hypotheses:

Main assumptions:

- There is no statistically significant effect at the level of ($\alpha=0.05$) for information technology in its dimensions, elements and characteristics of information technology, on the success of projects in its dimensions of survival, growth, and profitability in the health sector.
- There is no statistically significant effect at the level (0.05) of information technology elements and their dimensions on the success of projects in their dimensions in the health sector.

Sub-hypotheses:

- There is no statistically significant effect at the level (0.05) of the information technology elements and their dimensions on staying in the health sector.
- There is no statistically significant effect at the level (0.05) of the information technology elements and their dimensions on growth in the health sector.
- There is no statistically significant effect at the level (0.05) of information technology elements and their dimensions on profitability in the health sector.
- There is no statistically significant effect at the level (0.05) of information technology characteristics on the success of projects in the health sector.
- There is no statistically significant effect at the level (0.05) of information technology characteristics on staying in the health sector.

Methodology

Within the framework of the research problem, the pursuit of its objectives, and the presentation of previous studies, this research was divided into three main elements:

Data sources and methods of obtaining them. Data sources are divided into the following:

Secondary sources of data: mainly represented in Arab and foreign references, as well as periodicals and scientific theses that dealt with the subject of information systems and project management, which the researcher relied on in building the theoretical and analytical framework for the study.

Primary sources of data: These are the primary data related to the research topic. The researcher relied on the field study to provide the required data on the relationship of information technology to the success of projects, through a questionnaire list directed to users of the Tawakkalna application, in order to provide this data in detail to benefit from it in analyzing relationships and determining results. Testing hypotheses statistically and developing appropriate recommendations, thus achieving the main objectives of the study.

The limits of the study

- Spatial limitations: The study was limited to users of the Tawakkalna application in the Kingdom of Saudi Arabia.
- Time limits: The researcher prepared this research during the time period of 2024-2025.
- Limitations related to the subject of the study: The study was limited to examining the impact of information technology on the success of project management by applying it to the Tawakkalna application for smart phones in the Kingdom of Saudi Arabia.

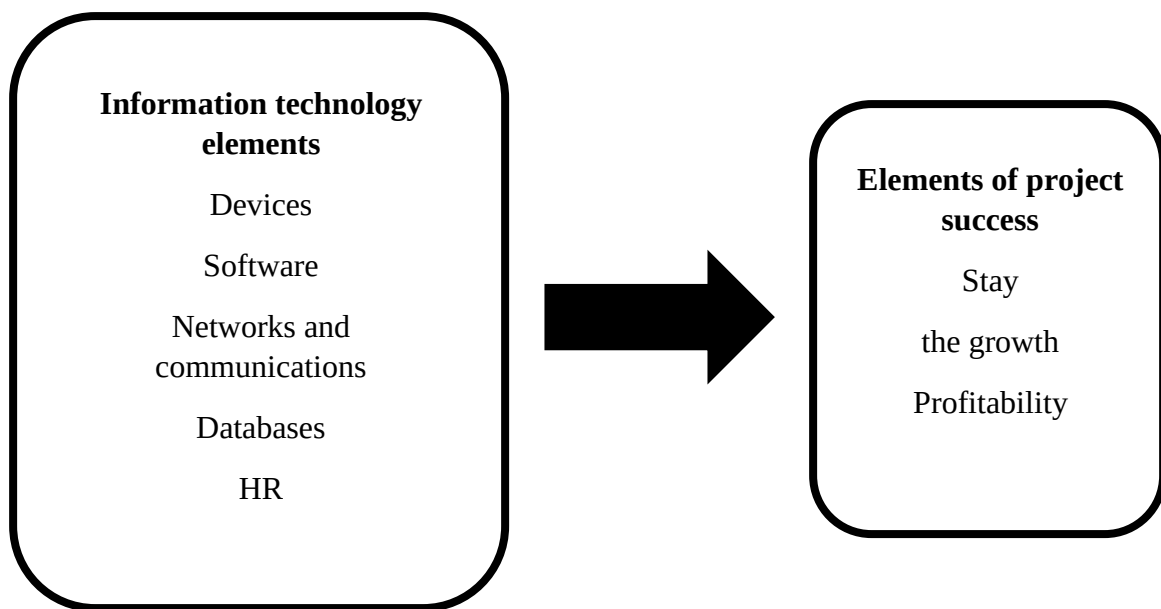
Analysis methods

The researcher relied on a variety of statistical methods to analyze the data obtained from the respondents. The most important of these methods are percentages, computer averages, standard deviation to measure the dispersion of values around their arithmetic mean, the Kruskal-Wallis test, and simple and gradual regression. The survey data was transcribed and analyzed using a computer.

Based on spss program.

Research model

Figure (1-1) shows a model for the study, to explain the effect of the independent variables, represented by information technology, on the dependent variable, which is the success of projects:



The model was prepared by the researcher

Difficulties faced by the researcher:

The most important determinants of this study were the set of difficulties that the researcher faced during the conduct of this study, which were initially the intersection of the concepts of technology, information technology, and information technology, and the lack of cooperation of the respondents in providing the necessary information to enrich the subject of the study and in answering the questions directed to them for fear of exposing them to responsibility. They were also slow in responding to the questions included in the data collection tool.

Previous studies

- **Previous studies on projects**

1. **Study by Abdul Rasoul (2019), entitled Building a Project Management Website. of the World Water Organization.**

The information and communication revolution has governed decisively the change management and it is now available to use the available information. to achieve the goals of the institution. Dependence on information and communications technology has become one of the most important pillars from which modern management.

In this research, a projects management site for the World Water Organization has been built, where the organization faces a problem in collecting donations and determining the priority of starting the implementation of the project. The research aims to facilitate the fundraising process and facilitate the conduct of the necessary studies to determine the priority of project

implementation, by saving time and effort by utilizing the techniques. Languages and techniques were used (Laravel, JavaScript, Ajax, Json, JQuery). UML was used in analysis and design schemes. Reducing the time and effort involved in the project request and fundraising process through bank transfer was found.

2. Hayarat Study (2021), The Impact of Project Management Practices on Public Safety: An Applied Study on Construction Projects in the City of Amman.

This study came to measure the impact of applying project management practices (project planning, project communication, project control and control) to improving public safety (maintaining worker safety, improving work environment and reducing safety costs) in projects. The study population consisted of contracting companies in the city of Amman registered with the Jordanian Construction Contractors Syndicate, and due to the conditions of the Corona pandemic convenience sample (236) of project managers, company owners and engineers. working in these companies was selected. A questionnaire covering all variables was developed to collect data from the study sample and analyze it using the SPSS program. After testing the hypotheses, the study found that there is no effect of project planning, project monitoring and control compared to communication in maintaining the safety of workers. The impact of project management practices on improving the work environment and reducing safety costs. Several recommendations were proposed to increase the benefits of project management practices on public safety in construction projects in the city of Amman, such as ensuring that engineering plans are audited before starting the project to ensure the element of public safety, and providing workers with appropriate training to identify risks to protect them from accidents and injuries.

3. Badawi's study (2019), Obstacles to financing small projects in the Gaza Strip from the viewpoints of project financing institutions and those in charge of the projects.

The aim of the study is to find out why microfinance institutions are reluctant to provide the required financing for small projects and to highlight the difficulties faced by small-scale entrepreneurs in obtaining the appropriate financing for their projects. this exploratory study targets microfinance institutions and small-scale entrepreneurs. this study adopts survey by way of questionnaire methodology where 44 questionnaires out of 50 targeted microfinance institutions were completed (%88), however, 33 out of 40 questionnaires targeted small-scale entrepreneurs were successfully completed (%82.5).

From the results, it was found that microfinance institutions believe that providing securities is indispensable in order to provide finance for entrepreneurs, and not providing such securities would make it hard to facilitate any projects. Also, not paying funding installments debts would adversely affect other microfinances. Besides that, the lack of financial funding limits the number of microfinances.

From the point of view of micro entrepreneurs, microfinance institutions do not provide the full funding required for the project and the amount of financing provided by the financing institutions is not suitable for the establishment of the project in a good manner and produces at a high cost and approval of the amount of funding needs a long period of time Before the management of the financing institution, which reduces the opportunity to establish the project and lack of sufficient experience to deal with the funding institutions to obtain the appropriate funding for the project .The study recommended working on holding educational workshops for project owners to deal with banks in the way they work and procedures to

facilitate the task of obtaining finance and credit facilities. To work hard to establish a unified institution to ensure project financing with the support of donors to break down the payment of projects to finance other projects and recommend financing institutions to facilitate procedures for guarantees and work on financing projects. with less guarantee commensurate with the capital of the project and recommend funding institutions to provide full funding for the establishment of the project as planned and to expedite the disbursement of funding to secure the establishment of the project in a timely. manner and recommend to the financial institutions not to increase the burden when the default payment from the sponsors and impose other obligations.

4. Saqr (2020) study, Financing housing projects in Algeria: a case study of the National Fund Equivalent Social Services FNPOS.

The housing sector in Algeria has undergone many and many transformations due to the economy and social conditions that the country has known, and among the most important circumstances we find in the financing housing projects in Algeria, which still suffers from many shortcomings, due to the lack of flexibility and specialization of financial institutions and also the limitation of financing, management and distribution in most cases to the state. And housing projects continued to suffer from problems of providing financing due to their huge and long terms, and therefore it was necessary to search for new sources to confront the problem of housing finance, so that the traditional sources of financing are considered insufficient to cover the huge volume of housing demands, so introducing new financing Tools is considered a necessity to modernize the real state sector.

5. Hawamdeh's study (2022), The impact of international project management standards on the quality of construction projects, a field study on contracting companies in Jordan.

This study aimed to identify the impact of international standards for project management on the quality of construction projects (a field study on contracting companies in Jordan). To achieve the objectives of the study, the descriptive survey method was used, by developing a questionnaire whose validity and reliability were confirmed. It was applied to random sample of engineers working in contracting companies in Jordan, which numbered (309). in order to answer the study questions and test its hypotheses, the SPSS program was used to analyze the study data. Extracting the arithmetic means and standard deviations, and applying the multiple regression equation. The study reached many results. the most important of which is that the degree of application of international standards for project management was medium, and that the level of quality of construction projects was medium. Existence of the impact of the application of international standards for project management on the level of quality of construction projects. This study also made a number. of recommendations, the most important of them are: Improving the degree of application. of international standards for project management in contracting companies in Jordan, and improving total quality management and quality control and assurance procedures in construction projects.

6. Al-Hiyari (2022) study: The impact of the personal characteristics of project managers on the success of construction projects, an applied study on construction projects in the city of Amman.

This study aimed to demonstrate the impact of personal characteristics of project managers on the success of construction projects in the in Amman city in terms of leadership, communication, work ethics, and productive efficiency. The study-targeted population was derived out of a group of construction projects in Amman, which consisted of (project managers, executive managers, supervising engineers), where the ongoing construction projects reached to (3717) according to the Jordanian Engineers Association data. The sample was selected randomly, which amounted to (580) individuals taking into consideration Stephen Thompson's equation to calculate the sample size. Questionnaires were distributed to the study sample as a survey, where (560) were retrieved, out of which (12) questionnaires were invalid for analysis and were excluded based on that, while (548) responses were valid for analysis used accordingly for this study. The study's primary data was collected through the questionnaires that developed with help of specialists and experts in the field. The study relied on quantitative approach & descriptive analytical method as well as Statistical Package for Social Sciences (SPSS) program that used to analyze the data. The study reached out several results, the most important of which was that there is an impact of the personal characteristics of project managers on the success of construction projects in Amman, where the value of (R^2) was (60.9%), construction project managers are characterized by directing and influencing the workers in the project, and supporting them morally in a manner that doesn't conflict with the project objectives. Based on the results, the study recommended the

need to intensify the work of supporting the project team financially in a way that doesn't contradict the project's objectives, and to involve them in the decision- making process in order for them to stay involved and loyal to the project.

7. Amr's study (2022), Construction Project Management Evaluation: An Applied Study on Construction Projects in Balqa Governorate.

This study was focused and aimed to evaluating the management of construction projects through its dimensions (planning, administrative organization, monitoring, follow-up) in the projects of the ministries of Local Administration and works in Al-Balqa governorate.

The study community consisted of construction projects affiliated to the Ministries of Municipalities and Works in Al-Balqa Governorate, where the application was applied to the study community by comprehensive survey, and it included a group of (project manager, assistant project manager, department head, supervisor), and the researcher relied on the quantitative approach in collecting primary data By making a questionnaire, developing it and distributing it to these projects, then analyzing it and testing its hypotheses using appropriate statistical methods and using the Statistical Package for Social Sciences (SPSS); As (167) questionnaires were distributed, (156) questionnaires were retrieved, and (5) questionnaires were excluded because they were not suitable for analysis, so that the final sample became (151) questionnaires. The analytical descriptive method was used by reviewing the previous literature related to the topic of the research in order to develop the study model.

The study reached a number of results, most notably: The level of evaluation of construction project management represented by its dimensions (planning, administrative organization, monitoring, follow- up) in the construction projects affiliated to the Ministries of

Municipalities and Works in Al-Balqa Governorate. Between (3.79 4.10). Based on the results, the study recommended the need to work on determining the needs of the construction project before completing the planning process, through the assistance of experts and consultants in similar projects.

- **Previous studies on information technology**

1. **Jack's study (2019), The role of information technology in strengthening strategic planning management with application to Khartoum State, July 2019.**

This study deals with the role of information technology on the promotion of strategic management by applying it on Khartoum state. The problem of the study was the lack of use of IT in strategic planning department of Khartoum state. importance of the study it can creates a modern and renewable operating environment and changes the level of performance and thinking to achieve a high degree of efficiency in long-term strategy, also to benefit from the information technology and then raise the efficiency of performance in the analysis, evaluation and evaluation of strategic plans, search tools java script. The importance of the study stems from the increasing importance of information technology in strategic planning management field to keep peace in developing countries. the absence of previous study in Sudan and methods of using information technology in raising the efficiency of the performance of the strategy. The main objective of the study is to determine the extent to which information technology is used in strategic planning. The study followed the analytical descriptive approach and the method of statistical analysis. Also, the study made many recommendations, including that The Ministry of Strategic Planning must increase the use of information systems to help manage strategic plans, especially electronic services and to pay

attention to the technical strategies within the state based on technology Modern information through technical systems.

2. Study by Ahmadana (2022), using the Gaussian technique. The cloud in providing direct information services to libraries, an applied study at the central library of Al-Nilein University.

The study dealt with cloud computing services in libraries to keep pace with the rapid development and rise to the level of developed. countries in the field of providing direct information services to the beneficiaries of the library.

The research problem is the weak utilization of information technology and computer systems in the provision of library services, and not taking advantage of cloud computing technology to provide these services. The research aims at the possibility of benefiting from cloud computing services in providing the services of current briefing and selective transmission of information through the work of a computerized system. The computrazed system provided, using PHP and java script for website design and SQL for database design.

An entity model was used to analyze the system. Algorithms were used to describe system operations. The study reached a number of results, the most important of which is the provision of a computerized system in the library that includes these services, and then uploading it to the GIT HUP cloud. The study recommends a number of recommendations, the most important of which is subscribing to the private cloud to be able to raise the library's database and link it to the site of its services.

3. Al-Rawashdeh Study (2021), The Impact of Information Technology Governance on the Quality of External Auditing: The Modifying Role of Enterprise Resource Planning Systems: A Field Study: Jordanian Commercial Banks.

This study aims to measure the impact of information technology according to the COBIT 5 framework on the quality of external auditing in light of the application of enterprise resource planning systems. In order to achieve the intended goals a questionnaire was developed covering all the study variables. The questionnaire was distributed to the target population, which consists all audit firms that assumed the task of auditing for the Jordanian commercial banks; moreover, the commercial banks in Jordan are (13) banks, according to the companies guide of 2019. The study consisted of a descriptive approach that is suitable for the purposes of the study. The number of questionnaires distributed (300) The number of responses to a questionnaire was (260) and the number of questionnaire analyzed (256) which represents the average of (85%). The researcher used the SPSS statistical analysis software to analyze the collected data.

The study found that there is a statistically significant impact of information technology governance according to COBIT 5 framework on the quality of external auditing. There was an impact of the dimensions:

(covering the bank from start to finish, total empowerment, meeting the requirements of stakeholders, applying an integrated framework and separating governance from management). The Jordanian commercial banks are interested in information technology governance in accordance with the COBIT 5 framework at a high level. As recommended by

the study to maintaining the prestigious level reached by information technology governance according to the COBIT 5 in the Jordanian commercial banks.

4. Study by Abu Taha (2021), the relationship of information technology governance to the quality of financial reports, a field study from the perspective of employees of the Jordanian Ministry of Finance.

This study aimed to show the relationship of information technology governance according to the dimensions of (COBIT 5) represented in (planning and organizing, owning and implementing, support and delivery, follow-up and evaluation, guidance and control) with the quality of financial reports represented by the qualitative characteristics of accounting information (appropriateness, honest representation, comparability, portability, For understanding, verifiability, appropriate timing) from the point of view of the Jordanian Ministry of Finance, and the study population and its sample may consist of (accountants, information technology employees, managers and their assistants, auditors, systems analysts, data entry) in the Jordanian Ministry of Finance, whose number is approximately (184) male and female employees, Where the researcher made a questionnaire and it was distributed to (150) male and female employees, where (132) male and female employees responded to it, and (3) questionnaires were excluded due to the incomplete answers of the respondents to them. The statistical package for the social sciences (SPSS) was used in the various statistical analysis, namely descriptive statistics and the internal consistency coefficient (Cronbach's alpha), as well as the multiple linear correlation test using the Pearson correlation coefficient and the coefficient of variance inflation, and also the multiple linear regression analysis was used. The study reached many results, the most important of which

were: The existence of a statistically significant relationship between the governance of information technology according to the dimensions of the framework (COBIT 5), presented in (planning and organization, ownership and implementation, support and delivery, follow-up and evaluation, guidance and control) and the quality of financial reports represented by qualitative characteristics Accounting information (relevance, honest representation, comparability, understandability, verifiability, timeliness) from the point of view of the employees of the Jordanian Ministry of Finance.

The study concluded with many recommendations, the most important of which is the need for the Jordanian Ministry of Finance to continue to apply information technology governance and to generalize this application to the entire public sector.

5. Haroun's study (2018), The role of information technology in national strategic planning by application to the Ministry of Agriculture, Livestock and Irrigation, Khartoum State.

the purpose of this research is the role that information technology plays in national strategic planning by focusing on the Ministry of agriculture, livestock and irrigation the Khartoum State Government, using descriptive analytical and deductive approach. Search for several most important results reached, strategic planning role in raising the efficiency of workers in the field of information technology, Ministry of agriculture, Ministry of agriculture information network media provide help on linking to external sites and easily share information and get it in time, funding is important Computer center of information technology, Ministry of Agriculture of the implementation phases of the it strategy in line with the strategy of the Ministry of agriculture. The most important recommendations of the

Ministry of agriculture researcher adequate budget and continues to develop and modernize information technology system of the Ministry, the need to pay attention to the training of all employees to take advantage of information and communication technology in their sectors of the Ministry, the establishment of databases contribute to Implementation of strategic plans for the Department of agriculture for all sectors of the Ministry of agriculture.

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