REPUBLIC OF TURKEY
ISTANBUL GELISIM UNIVERSITY
INSTITUTE OF GRADUATE STUDIES

Department of Business Administration

THE IMPACTS OF PROJECT MANAGEMENT

AND GOVERNMENT SUPPORT ON PROJECT'S ECONOMY

A COMPARATIVE STUDY OF PRECAST CONCRETE

FACTORIES IN IRAQ

Master Thesis

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Turkish Abstract : Çalışma, proje yönetimi alanında hissedarlar veya yatırımcılar tarafından uzmanlık ve yetkinliğe sahip proje yöneticilerinin atanmasına ek olarak, bu çalışmaya eklenmeyen proje ekonomisini etkileyen bağımsız değişkenlerin araştırılmasını ve ayrıca hükümetin bu konuya olan ilgisini tavsiye etmiştir.

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DECLARATION

I hereby declare that in the preparation of this thesis / project, scientific ethical rules been followed. The works of other persons have been referenced in accordance with the scientific norms if used, there is no falsification in the used data, any part of the thesis /project has not been submitted to this university or any other university as another thesis/project.

Saad Mohammed Abdulrahman AL OGAILI

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THE DIRECTORATE OF SOCIAL SCIENCES INSTITUTE

The thesis study of (PROJECTS MANAGEMENT) titled as (THE IMPACTS OF PROJECT MANAGEMENT AND GOVERNMENT SUPPORT ON PROJECT'S ECONOMY (A COMPARATIVE STUDY OF PRECAST CONCRETE FACTORIES IN IRAQ)) has been accepted as MASTER THESIS in the department of BUSNISS ADMOINISTRATION by out jury.

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I approve that the signatures above signatures belong to the aforementioned faculty members.

... / ... / 2022

Prof. Dr. İzzet GÜMÜŞ

Director of the Institute

ÖZET

İnşaat projeleri her ülke için önemli projeler arasında yer almakta ve inşaat maliyetlerine, uygulama süresine ve kaliteye verilen önem verilmektedir. Projelerin PCF (prekast beton fabrikası) ile hayata geçirilmesi, geleneksel şekilde uygulanan projelerden farklılaştığı önemli projelerden biri olarak kabul edildi. Bu fabrikaların birçoğunun kapanması, inşaatta hız ve miktar açısından bir zafiyete yol açmasının yanı sıra, FKA'da çalışan işçilerin ve onların işlerinin sonlandırılmasının yanı sıra, bu tür inşaatların altını çizmek gerekir. Projeler. Bu nedenle bağımlı değişkeni (proje ekonomisi) etkileyen bazı bağımsız değişkenler (proje yönetimi ve devlet desteği) incelenmiştir. Araştırmanın hipotezi, birinci bağımsız değişkenin (proje yönetimi) bağımlı değişken (proje ekonomisi) üzerinde, ikinci bağımsız değişkenin (devlet desteği) bağımlı değişken (proje ekonomisi) üzerinde etkisinin olduğu şeklindedir. Çalışma ayrıca, bu araştırmaya dahil edilen üç proje arasında farklılıklar olduğunu da ortaya koydu.

Proje yöneticileriyle yapılan görüşmeler yoluyla toplanan birincil veriler, bir anket aracılığıyla toplanan ana veriler (Beş seçenekli Likert ölçeği: kesinlikle katılıyorum, katılıyorum, nötr, katılmıyorum ve kesinlikle katılmıyorum). Bu anket üç bölümden oluşmaktadır, birinci bölüm bağımlı değişken (proje ekonomisi) ile ilgili sorularla, ikinci bölüm birinci bağımsız değişken (proje yönetimi) ile ilgili sorularla ve üçüncü bölüm ikinci ile ilgili sorularla ilgilidir. Bağımsız değişken (devlet desteği). Bu anket, üç PCF içeren çalışma örneğine dağıtılmıştır ve bu fabrikalarda yanıt verenlerin sayısı 75'tir.

Anketten elde edilen veriler, cevaplayıcıların cevaplarını bulmak için analiz edildi. Ankete katılanların çoğu, birinci ve ikinci bağımsız değişkenlerin (proje yönetimi ve devlet desteği) bağımlı değişken (proje ekonomisi) üzerinde bir etkisi olduğuna kesinlikle katılıyor, buna ek olarak ekonomi üzerinde olumsuz bir etki olduğuna kesinlikle katılıyorlar. Onların PCF'si. Daha sonra bağımsız değişkenlerin bağımlı değişken üzerindeki etkisinin derecesini görmek için sıralı verilerden aralıklı verilere aktarılan veriler, çoklu doğrusal regresyon analizi yaparak, birinci bağımsız değişken tarafından bir etki olduğu sonucuna varıldı ve orada ikinci bağımsız değişkenin etkisi yoktur.

Üç proje arasında farklılıklar olduğu hipotezini test etmek için bağımsız örnekler t testi analizi kullanıldı. Sonuçlar, birinci proje ile ikinci proje arasında proje ekonomisini etkilemede

i

farklılıklar olduğunu, birinci projenin ikinci projeden daha az etkilendiğini, ancak ikinci proje ile Üçüncü veya birinci proje ile üçüncü proje arasında hiçbir fark bulunmadığını buldu. Proje.

Çalışma, proje yönetimi alanında hissedarlar veya yatırımcılar tarafından uzmanlık ve yetkinliğe sahip proje yöneticilerinin atanmasına ek olarak, bu çalışmaya eklenmeyen proje ekonomisini etkileyen bağımsız değişkenlerin araştırılmasını ve ayrıca hükümetin bu konuya olan ilgisini tavsiye etmiştir.

Anahtar Kelimeler: Proje yönetimi, devlet desteği, proje ekonomisi, prekast beton fabrikası.

SUMMARY

Construction projects are among the important projects for each country, and consideration it given to construction costs, time used for implementation, and quality. Implementation of projects with PCF (precast concrete factory) it considered one of the important projects that it distinguished from projects implemented in the traditional way. This type of construction should highlighted in view of the closure of many of these factories, which in turn causes a weakness in the construction in terms of speed and quantity, in addition to the termination of the service of the employees who work in PCF and their projects. Therefore, some independent variables (project management and government support) that affect the dependent variable (project economy) as studied. The hypothesis of the study included that there is an effect by the first independent variable (project management) on the dependent variable (project economy), and the effect of the second independent variable (government support) on the dependent variable (project economy). The study also imposed that there are differences between the three projects included in this research.

Primary data collected through interviews with project managers, the main data collected through a questionnaire (Likert scale with five options: strongly agree, agree, neutral, disagree, and strongly disagree). This questionnaire contained three sections, the first section is concerned with questions about the dependent variable (project economy), the second section is concerned with questions about the first independent variable (project management), and the third section is concerned with questions about the second independent variable (government support). This questionnaire distributed to the study sample, which included three PCF, and the number of respondents was 75 respondents in these factories.

The data taken from the questionnaire was analysed to find out the responses of the respondents. Most of the respondents were strongly agree that there is an effect by the first and second independent variables (project management and government support) on the dependent variable (project economy), in addition to that they strongly agreed that there is negative impact on the economy of their PCF. Then the data transferred from the ordinal data to the interval data to see the extent of the influence of the independent variables on the dependent variable by doing a multiple linear regression analysis, the results came that there is an effect by the first independent variable and there is no effect by the second independent variable.

Independent samples t-test analysis was used to test the hypothesis that there are differences between the three projects. The results came to find there are differences in influencing the project economy between the first project and the second project, where the first project was less affected by the second project, but there were no differences between the second project and Third or first project and third project.

The study recommended studying the independent variables that affect the project economy that was not add it to this study, in addition to appointing project managers with expertise and competence in the field of project management by shareholders or investors, as well as the government's interest in this type of project.

Key Words: Project management, government support, project economy, precast concrete factory

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ABBREDIVATIONS

BOT	:	Build-operate-transfer
BTO	:	Build-transfer-operate
ESCAP	:	Economic and social commission for Asia and Pacific
GS	:	Government support
IOFS	:	International organization for standardization
IRM	:	Institute of risk management
MSI	:	Method of successive intervals
PCF	:	Precast concrete factory
PE	:	Project's economy
PM	:	Project management
PMBOK	:	Project management body of knowledge
PMI	:	Project management institute
PMO	:	Project management office
PMs	:	Project manager
PPP	:	Public-private partnerships
S.D	:	Standard deviation
S.E	:	Standard error
S.V	:	Sample variance
SMEs	:	Small and medium enterprises
SPO	:	Strategic project office
TFC	:	Total fixed cost
TR	:	Total revenue
TVC	:	Total variable cost
US	:	United states
WTO	:	World trade organization

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PREFACE

To who took care of me and protected me throughout my life, My Creator, My God…

To my university, all my teachers, supervisor, members of the jury, and all university employees.

To who raised me, supported me, and fulfilled all my wishes and those dear to my heart, my Father and Mother...

To who are dear to my heart, they and their families, my breath, my sweet sisters, (Khayria, Raghda)…

To who helped me in the success of my thesis, which is my brother and childhood friend (Ahmed Hussein Al-Mousawi)…

To whom near to my heart, my dear classmates and friends (Mazen Imad Al-Shammari and Muhammad Farhan Al-Anazi)...

To who support me with everything, my companion, my dear beloved, my soul mate, my life partner and the mother of my lovely children (Noor Asaad Abd Al-Hamdani)…

To my children, my beloved, and my soul (my daughter Angel, is the candle of my life, Muhammad is the light of my heart, Ibrahim is my soul)…

Thank you all for helping me to achieve this success.

I dedicate this study to the one who passed away from me, to my childhood friend, my brother, my father, my mother, my bond and the carrier of my concern and my secret... The brother who disappeared with his absence the sun of my life... My beloved **Younis Ahmed Hobi Al Qaisi**…

INTRODUCTION

Precast concrete factories considered one of the most important factors for all countries, as they characterized by the speed of completion of the projects and the reduction of losses in the materials used for construction. Iraq entered many wars, as most of the state budget was transferred to arming the army, which led to the extinction of existing buildings (such as hospitals, universities, laboratories, schools, etc.), in addition to the lack of construction of new buildings, so Iraq needs many projects and especially construction projects, in addition to the need for speedy completion the projects. During the last ten years, these factories were established and in turn carried out many projects, but after 2014, the projects entrusted to these factories decreased due to the entry of Iraq into a war. Which in turn led to the suspension of work on these factories and consequently to their closure, and some of them continued to work by 10% of the number of employees compared to the previous number of employees, and the lack of work in all production lines due to the lack of business. All of this led to the extinction of these factories and consequently the loss of the owners of these factories and the loss of Iraq to such factories.

The project manager must have a project management specialization, and this specialty considered one of the rare specialties in Iraq.

For that, this research studies the impact of project management and government support on the economy of these projects, in addition to making a comparison between precast concrete factories to see which one has the least impact with its economy.

CHAPTER ONE

INTRODUCTION OF THE STUDY

1.1. Introduction

The Project Management Institute defines project management as "the application of knowledge, skills, tools and techniques to project activities to meet project requirements (institute, 2000). Regardless to this definition may seems straightforward, the skilful application of those abilities, tools, and procedures will only occur after a large amount of education and on-the-job experience. The PM process requires the formation of a small organizational structure (the project team), which is frequently a microcosm of the bigger company. The method subsequently asks for the decommissioning of that modest organizational structure once the team has achieved the intended result.

Project management has two major aspects:

• The art—leading the people on the project.

• The science—defining and coordinating the work to be complete it.

The art of project management is concerned with the notion that projects are ultimately about people doing tasks. PM necessitates a thorough understanding of human behaviour as well as the ability to employ suitable interpersonal skills deftly. The second aspect—and the centre of the (project management book)—involves knowing, interpreting, and applying a prescribed project management method with skill. This process is designed to assist project managers and teams in accomplishing essential process phases such as identifying the genuine need, defining the project objective, developing a project execution plan, and maintaining project management throughout the project. The development of a set of graphic tools, documentation, and processes, all targeted at helping project success, is the process's primary concept. Among the graphic tools and documents are the Requirements Document, the Work Breakdown Structure, and the Network Diagram (all covered in chapters to come) (Heerkens, 2001).

All types of projects, whether service projects, investment projects, long-term or short-term projects, all lead to raising the level of economic growth and in varying proportions. Therefore, must be attention to the types of projects that be start in terms of priority:

1- Projects with external financing
2- Projects with internal financing

Joint projects between external financing and internal financing (financing may be financial, labour, equipment, etc.).

From here, we see that some countries support a certain type of projects that give great benefit to these countries, so they support these projects with what they can from the capabilities available to them and for this, we will mention some types of support, which are as follows (ESCAP, 2008):

1- Land acquisition: delays or complications could be a big source of risk for investors, especially for road and rail projects and other projects that require huge swaths of land. The government may consider using public lands for infrastructure projects to eliminate land acquisition issues. If necessary, the government may acquire private land on behalf of the investor for a project.

2- Capital grant and other forms of financial support: The government may consider a capital grant, either one-time or delayed, with the goal of making a project commercially feasible. Other forms of financial assistance that the government may consider include interest-free or low-interest loans, subordinated loans, operation and maintenance support grants, and interest subsidies.

3- Revenue guarantee: The government may explore providing revenue guarantees for high-risk initiatives. The government can guarantee a specific proportion of predicted revenues up to a particular limit. The revenue guarantee, on the other hand, has a significant disadvantage. When such a guarantee offered, debt can be structure it around it, which might effectively mean the government taking on business risks. In this circumstance, the private operator may lose interest in improving its internal efficiency as well.

4- Foreign exchange risk: is one of the most important concerns among investors. The income earned by infrastructure projects are mostly in local currency. However, a significant portion of debt servicing and other payments is frequently in a foreign currency. The government may take steps to reduce the risk of foreign exchange volatility for investors. When foreign exchange fluctuations exceed a specific threshold (say, 20%), a portion of the losses incurred as a result of the fluctuations may be

mitigated by changes in tariff rates, government subsidies, the concession term, or other conditions.

5- Tax incentives: PPP projects may also be eligible for a variety of government tax breaks. These are some of them:

  a- The acquisition of real estate for BOT projects is exempt from registration tax.

  b- Value-added tax exemption or application of a reduced rate for infrastructure facilities or construction of infrastructure facilities given to state or local governments as BTO and BOT projects.

  c- Reduction of or exemption various appropriation costs.

  d- Setting aside a specified percentage of the investment as a reserve to be considered as an expense for calculating corporation taxes.

  e- Allowing the project firm to issue infrastructure bonds with a lower interest tax rate.

  f- Protection against tariff reductions or the reduction of the concession period.

6- Loan guarantee: A loan guarantee is a guarantee to a lender giving financing to a project firm that the government would return the amount guaranteed if the borrower defaults, subject to the terms and conditions of the agreement.

7- Force majeure: In the case of a prolonged force majeure, the government may consider buying out a project.

Which was previously read it, to be clarified project management is (how to choose projects and how to project management) and GS has an impact on the success and prosperity and the growth of the project or the failure and the demise of the project, and all this is represented by (the economy of the project). Through this study, it will be determined whether there is an impact of the aforementioned variables on the project's economy or not.

1.2. The research scopes

In this research, the field of this study taken in Iraq, also this research focuses on the work of precast concrete factories, which considered a primary part of construction projects and which considered important factory not only in Iraq, but rather on most countries of the world. Local and foreign contractors and investors have imported these factories and installed them in Iraq. The study mainly deals with the impact of project management and GS on PCF in terms of the success or extinction of these factories.

1.3. Literature Review

Didenko & konovets (2009), conducted a study on the success factors in construction projects, and it was a case study for housing projects in Ukraine. The study collected data by making a questionnaire form and distributing it to 110 experienced project managers, the response came from 26 project managers, and the results of this study were to determine the most significant success elements, which include the economic environment, project manager experience, and project team qualification. One of these factors, which is the experience of the project manager, also came from my research under the title (project management).

Al-mahdawi & Mzeid (2010), conducted a study under the title (Reform of Governmental Support ... Future Iraq Scenario), where this study examined the problem and recipes for reform that international institutions with a capitalist orientation came to confuse the features of the real picture in the Iraqi economy heading towards a market economy. The aim of the research is to review recipes for reform by abolishing government subsidies and undertaking a fundamental review to formulate new reform strategies, and used the analytical approach to analyze the data and came with several conclusions. The most important of which is that canceling government subsidies under the pretext of a debt problem is wrong as the problem of GS in the Iraqi economy is an implementation problem, not a funding problem.

Asal (2014), conducted a study on determining the factors affecting the estimation of the cost of building construction projects, this study based on previous studies and a questionnaire

made by himself, the study selected 47 projects as a sample for his research. Through this study, the most important of these factors identified, which represented by 12 main factors. This study focused on the contractor or the executor of the project, but did not examine the factors that affect the project owner.

Lohmann (2014), conducted a study about the additional effects of government subsidies on research and development activities in the aviation industry, as the problem that was studying the lack of central knowledge about the impact of public funding on the organization, which was considered as a knowledge problem. The study studied the additional impacts at the project level, and the research sample was 18 projects. Data collected through an interview, and the questionnaire use as a reference only, not to answer, but to familiarize the participants with the type of questions. The results of the study showed that the additional effects of GS has a decisive effect on (the decision to implement or not implement those projects, prolonging the duration of specific projects, the outputs that are represented by the patent).

Al-taei (2014), conducted a study of government support policy in Iraq, as these policies direct financial allocations to those who are not eligible and the inefficiency of spending due to a large waste of public money. The study aims to identify the economic importance of these policies applied in Iraq and find a way to reduce the costs of the transition towards the market economy, which the Iraqi economy seeks to implement. Has been used the descriptive and analytical approach, and one of the most important conclusions of this study was the adoption of a good method of support to contribute to reducing the disparity in income distribution among community members and reducing poverty. This study focused on the food card of the Iraqi people and did not study the rest of the sectors such as industrial and agricultural, which have a major role in improving the level of the country's economy and reducing the state of poverty.

Lindehammar & Cederhill (2017), prepared a study on increasing the success of project management, and the problem of this study was the continuing disappointment of stakeholders for projects in many organizations, so the aim of the study was to define the success of project

management and the decisive factors to achieve this. The study collected data through interviews with managers. Projects and the study sample was 29 IT projects, and statistical analysis followed in analyzing the data, and the results came that (senior management, risk management) represents the critical success factors for the success of the project management in relation to the performance of the project schedule. While the performance of the project budget was influenced by the factors (senior management support, risk management, monitoring and control). This study discussed important factors for all projects, which is the core of my study subject, which came under the title (The Project Economy).

Ong'ondi (2017), studied strategies to improve project managers' performance, and the problem of the study revolved around the continuing challenges of project failure for business leaders. Lack of good project coordination with business strategies was a major factor in less successful project outcomes. The aim of the study was to explore strategies that project managers use to align project management processes with business strategies to improve project performance. The study sample was (8) project managers and data was collected through semi-structured interviews, and the study used Hoshin Kanri as a conceptual framework for this study. The results of the study were that business leaders should involve project managers while developing business strategies. In my view, project managers should be involved in everything related to the project and not only in developing business strategies.

Friel (2017), conducted a study regarding the project manager's perceptions of the value of organizational project management. The purpose of this research was to investigate the effectiveness of organizational project management in providing project value and from the project manager's point of view; it is the framework for achieving project success. The research problem was the need for management within organizations by focusing on selecting appropriate projects to add commercial value, advantages and return on investment. The sample was (5) project managers with more than (10) years of experience. Data were collect through semi-structured interviews on a one-on-one basis, and the most prominent results were the misapplication of business strategies compatible with the project selection.

Haile (2018), conducted a study on assessment on application of prefabricated concrete structural element. The problem of this study was not to fully study the role of prefabrication technology in the growing real estate industry. Therefore, the aim was to evaluate the application of prefabrication concrete structural elements in the real estate industry, the study used a descriptive research design and a mixed research approach, and the sample consisted of 36 real estate developers. Data were collect by using a questionnaire form and a structured interview, and this data was analyzing by using Frequency analysis and materiality index. The most important results of this research were that almost all professionals have a theoretical awareness of prefabrication technology and that the majority of them prefer to use prefabrication to the traditional method of building.

1.4. The research problem

1- Project management specialization is one of the rare specialties in Iraq.
2- Many projects and factories specialized in the prefabricated construction method have been closed
3- The absence or lack of government support for some strategic projects leads to economic disadvantages for the country and to the loss of these factories and large financial losses.
4- The disappearance of these factories leads to an increase in unemployment.

1.5. The research questions

1- Is there an impact on the project's economy by the project management?
2- Is there an impact on the project's economy by the project management and government support?
3- Is there any different between the samples (three projects), which project is more or less affected by its economy than the rest of the projects?

1.6. The research hypothesis

There are many variables effect the PCF, which in turn affects the project's economy, these variables are:

H01**:** There is no significant impact from the project management on the project's economy/ fail.

H02**:** There is no significant impact from the government support on the project's economy/ fail.

H03**:** There is no significant different between project1 (Al-Kut precast) and project 2 (Babylon company for precast building) / fail.

H04**:** There is no significant different between project (1) (Al-Kut precast) and project (3) (Al-Burhan factory) / fail.

H05**:** There is no significant different between project (2) ((Babylon company for precast building) and project (3) (Al-Burhan factory) / fail.

1.7. Reasons for choosing the subject

1- Project management specialization is one of the rare specialties in Iraq.
2- The extinction of some projects.
3- Using the building in the traditional way.
4- Iraq needs many construction projects such as schools, hospitals, universities, and others.
5- Such kind of factories require a lot of labour inside and outside the factory, and thus unemployment reduced.

1.8. Research objectives

1- Knowing the impact of project management specialization on the project economy.
2- Knowing the impact of government support on the project's economy.

3- Obtaining governmental interest and support for this type of project.

1.9. Research importance

The significance of this study consists of two parts:

First: The theoretical importance: In the event that the research hypotheses confirmed, this study will become an essential part of the theory related to supporting these projects and managing them well. If these hypotheses not confirmed, the subsequent studies will use this research as a basis for them to continue the investigation, because this research is the first of its kind in Iraq.

Second: The practical importance: This importance includes benefiting from these factories from several aspects, which are:

1- Eliminating unemployment by attracting these factories to a large number of labour.
2- The speed of completion of projects in terms of these factories preparing the basic materials for construction projects.
3- As mentioned previously, Iraq needs a large number of construction projects.
4- This study can be use in a useful way by the government and investors in the event of the desire to undertake projects to establish factories related to construction or other projects.

1.10. Research concepts and definitions

Project management studies and government support are of great importance for developed countries and countries that want to become advanced countries, and Iraq could become a developed country because of the many resources it contains, but it lacks proper planning and implementation. This study helps to develop the right plans to manage, sustain, and develop these projects, which are of economic importance, which in turn leads these projects from start to finish in the best way.

1.11. Research methodology and approaches

The use of quantitative research methodology will done using the questionnaire, and will use qualitative research methodology and that by using the method of interviews.

The use of a research study that uses the quantitative research method and the qualitative research method together is call "mixed methods". In addition, the method of using mixed methods gives the power that compensates for both the quantitative and qualitative research approach and gives a more comprehensive guide to the research problem with respect to the use of the research method of quantitative or qualitative alone (Creswell, Research design: qualitative, quantitative, and mixed methods approaches, 2009).

The study was a society on PCF factories in Iraq, where the number of these factories is (8) factories and three factories taken as a sample for this study, the fact that three factories stopped working and one is a special factory for a residential project.

In this research will make a questionnaire on the Likert scale and divided into three sections (project economy, project management, government support). Then distribute this questionnaire to 20 people from the study sample in order to extract validity and reliability, this study extracts the sample size using Steven K. Thompson equation, then give a questionnaire to the study sample and take it after they enter the information on it. After receiving the questionnaire, will change theses ordinal data to interval data by using method of successive interval (MSI) and input these data in SPSS program to do analytics on it.

1.12. Research data collection methods

Two methods used to collect the study data, which are as follows:

1- The questionnaire: this tool used for the quantitative method.
2- The interview: this tool used for the qualitative method.

1.13. Research time and spatial period

The data for this study collected from 17/6/2021 to 2/7/2021, and the spatial boundaries of this study were in the State of Iraq and in more detail, these factories were located in the governorates listed in the table below:

Table 1. Precast factory location

	Name of the province	Number of factories	Factory name
1	Wasit	2	1- Al-Kut precast
			2- Al-Burhan factory
2	Babil	1	Babylon company for precast building

Not study the rest of the factories located in Iraq, which are numbered 4 closed and stop work during the study period, and another factory is a special factory for a Korean company it's constructing a residential complex.

CHAPTER TWO

THEORETICAL FRAMEWORK

2.1. Introduction

Projects at the level of the private and public sector are among the important issues because they have a great impact on the level of individuals and countries. In that, projects increase employment opportunities and thus eliminate unemployment and raise the level of the economy, both at the project level and at the country's overall level, as well as operating the rest of industries and that is according to the type of project. Therefore, some projects develop with them some other industries, and rather factories of raw materials and marketing, some projects suffer from loss and extinction for several reasons, including what was mentioned in this study, which is represented by the variables (PM and GS), which in turn Affects the variable (the project economy).

Before starting to explain these variables, most explain (the project) as a basic input to the title of the research to make the explanation smooth and understandable to readers who are not from this specialty.

2.2. The project

Stare (2019), defined the project as a targeted, complex process that has time and cost limits and has logical tasks and must be completed, which means creating products or services and must conform to quality standards and customer requirements.

Harelimana (2017), pointed out that projects are complex activities and organizational activities, which are one-time operations that have a specific budget and a scheduled period time for completion. These projects aim to achieve operational or technical specifications and are create to satisfy the requirements of clients.

Anbari & project management institute (2009), added that the definition of the project is a temporary endeavor undertaken to create a unique project service or result.

From the above, we can define the project as a series of interrelated operations that aim to produce services or products. Which defined by a period of time, technical specifications and financial costs (budget) according to the requirements of the project owner, and the project includes a manager and a number of employees whose number varies according to the size of the project.

2.2.1. The Project Life Cycle

The project life phases divided into four main sections, which are (Heerkens, 2001):

1- The first phase: This stage is called (the initiation phase), through which the following will be accomplished:

    A- Defining the needs and describing how to respond to these needs.

    B- Determine which work groups will participate in the project.

    C- Define the outputs.

    D- Justifications for the completion of the project and addressing the issue of feasibility of the project.

2- The second phase: This stage is called (the planning phase), through which the following is done:

    A- Developing project action plans by preparing as many details as possible.

    B- Determine the intermediate products to work in addition to their production strategy.

    C- Defining the tasks (work items).

    D- The best sequence of tasks.

    E- Determine the amount of money and time required to implement the tasks.

    F- Determine work completion dates.

    G- After the completion of the identification of the above-mentioned elements, then prepare a formal request for approval to implement the project.

3- The third phase: This stage is called (the execution phase), through which the following will be accomplished:

    A- Supervising the implementation of the works specified by the project manager.

    B- Monitor the progress of work continuously.

C- Make adjustments and record them so that they appear as differences from the original plan.

D- Keeping the project team focused on attaining the objectives set out at the outset.

4- The last phase: This stage is called (the closing phase), through which the following will be accomplished:

A- Ensure that the project will meet the original need of its establishment.

B- Smooth transition from completion (project) to post-handover use (post-project life cycle).

C- Hand over the project to the owner.

D- Gradually redistribute project team members.

E- Close the project.
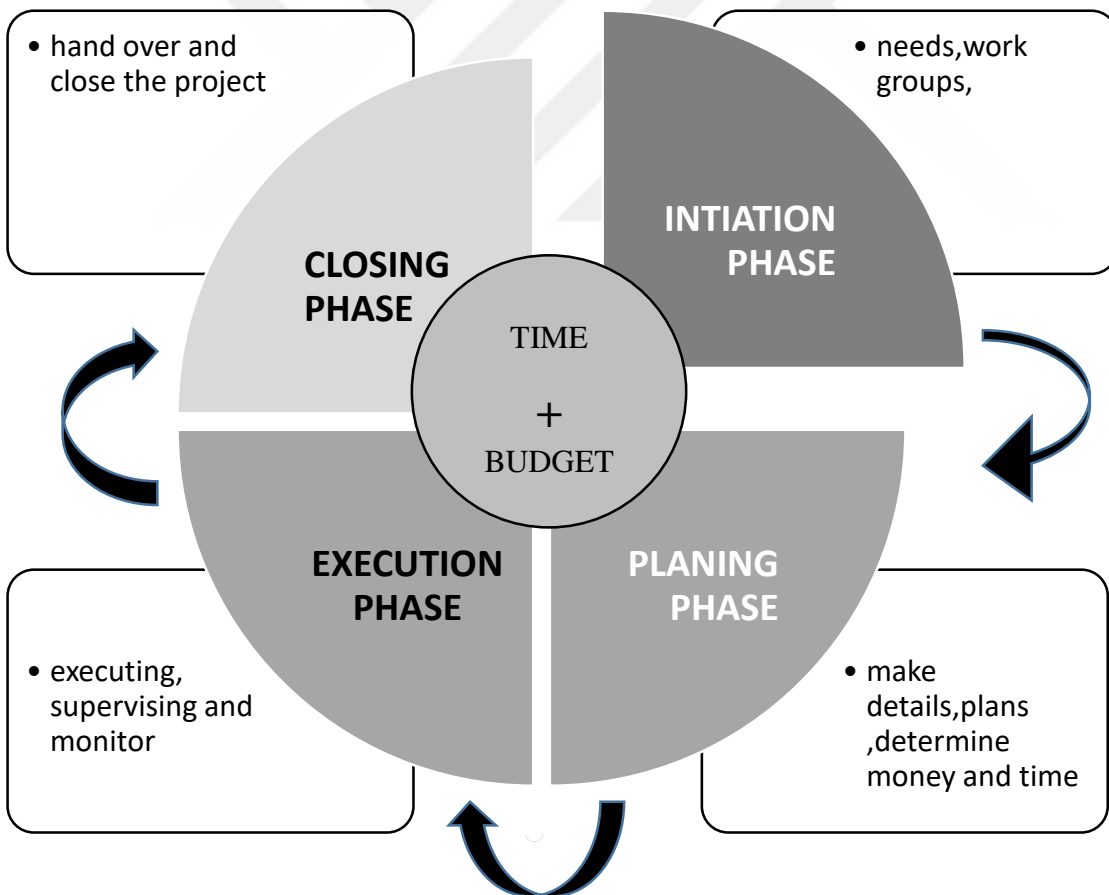
Figure 1. Project life cycle (Westland, 2007)

2.2.2. Project Characteristics

There are typical characteristics of the project where (Stare, 2019) briefly defined these characteristics as follows:

1- Temporariness or finality: The project has a clear and agreed time limit and cannot be consider a permanent implementation process. Therefore, the project has a start date and an end date, the project products do not apply to completion

2- Uniqueness: The projects result in unique products, services or results. The project is consider unique because it is not likely that the project will be repeat in the same way and the same participants in it. Project implementation cannot be considered a standard or routine because every project has routine tasks

3- Goal orientation: The project organization process is to achieve one or more goals (service, product, etc.) and to achieve these specific objectives, all project tasks executed and planned.

4- Limited: Each project has its own constraints such as budget, quality, and time (called the triple constraint). Some studies and authors add other factors, but the real limitation is the project's budget. The higher the budget, the project manager allows the project to appoint the best experts.

5- Complexity: Some projects have complex goals and thus require many tasks and a mixture of people who have different skills, roles and responsibilities, and it requires precise control of performance, cost and time.

6- Connected and interdependent project tasks: The project has a chain that must be execute in order to deliver the required goals. This series of tasks depends on each other and it is not possible to carry out tasks before the tasks that precede them.

7- Conflict: Project managers work in a conflicting environment more than other managers do. A project is consider as an institution in the organization, PMs compete with managers of individuals and other departments, and they are distinguished in a multi-project environment in particular.

8- Riskiness: Each project differs from the previous projects, so the team faces the risk of many problems during the project such as (requests for change by the project owner, difficulties in implementing the work, weather, etc.). All these problems prevent the project from been completed within the specified expectations.

2.2.3. Types of Construction Projects

Projects divided into several sectors, and each sector has its own set of legal issues, payment method and safety, so determining the type of project is a major and essential part.

There are several different ways to classify projects, as follows (Jr, 2013):

1- Construction Projects by Sector: The type of construction projects refers to the actual facility under construction which is as follows:
   - Building construction: It includes homes (single and multi-family homes) and commercial buildings (offices and warehouses).
   - Industrial construction: It includes energy facilities (gas, oil, and solar energy fields), distilleries, factories, and other areas of production.
   - Heavy civil construction: Also called (civil constructions), includes roads, airports, bridges, and sewage systems.

2- Construction projects by owner type: State laws are concerned with who owns the project or real estate when it comes to payments and contracts, and the amount of risk that suppliers and contractors will take on the project. So all have to do is looking at the immediate payment laws and any law that affects the contractor or supplier's right to pay for the job. From the above, we can divide it as follows:

- Private residential projects: The projects controlled or owned by a private side (individuals), companies, non-profit societies, homeowners and private schools, meaning they are non-governmental projects. These projects are of all different sizes and shapes.

- Private commercial projects: It is the construction of facilities or buildings for commercial purposes, which include a wide variety of projects such as (grocery stores, shopping centers, restaurants, skyscrapers, private schools, hospitals, etc.)

- State construction projects: It is a government projects, and the term (state) represents the projects that ordered to be establish by a municipality, city, board of directors, or any entity financed by the state. These projects are very complex and include construction of highways, sewage lines, and construction of bridges.

- Federal construction projects: Projects that have a lot in common with state projects. Traditional, extremely simple, and very complicated projects are all examples of these types of undertakings. These projects resemble state-built structures such as government buildings, courts, flood control projects, etc.

3- Construction projects by building occupancy: The majority of building projects are class it based on their intended use and the number of people who will occupy the space after it is finished. Local judicial authorities have building-specific laws and a set of acceptable codes are chosen, for example in the United States the most common is the International building code (IBC), this code contains 10 classifications of buildings:

- Assembly (Group A): The facilities where people gather in large groups, such as restaurants, stadiums, theaters, religious homes, and others.

- Business (Group B): The establishments in which they provide commercial services, such as universities, doctors 'offices, government buildings, hair salons, banks, and others.

- Educational (Group E): The facilities specialized in educating young people, such as secondary and primary schools, day care centers and others.

- Factory (Group F): The facilities built to manufacture, repair, assemble or repair goods, such as furniture stores, car repair workshops, cabinetmakers, and others.

- High-Hazard (Group H): The establishments concerned with the production and storage of toxic or flammable materials, such as explosives, fireworks, flammable liquids, and others.

- Institutional (Group I): Hospitals, nursing homes, prisons, and other facilities built for individuals who require physical assistance or jailed.

- Mercantile (Group M): The establishments built for retail sale or display of goods, such as malls, gas stations, grocery stores, drug stores, and others.

- Residential (Group R): The housing and dormitory facilities, such as hotels, homes, motels, and apartment buildings.

- Storage (Group S): The facilities specialized in storing non-hazardous materials, such as car garages, warehouses, and others.

- Utility and Miscellaneous (Group U): Structures constructed for other uses not mentioned in the previous groups, such as barns, water towers, sheds, and greenhouses.
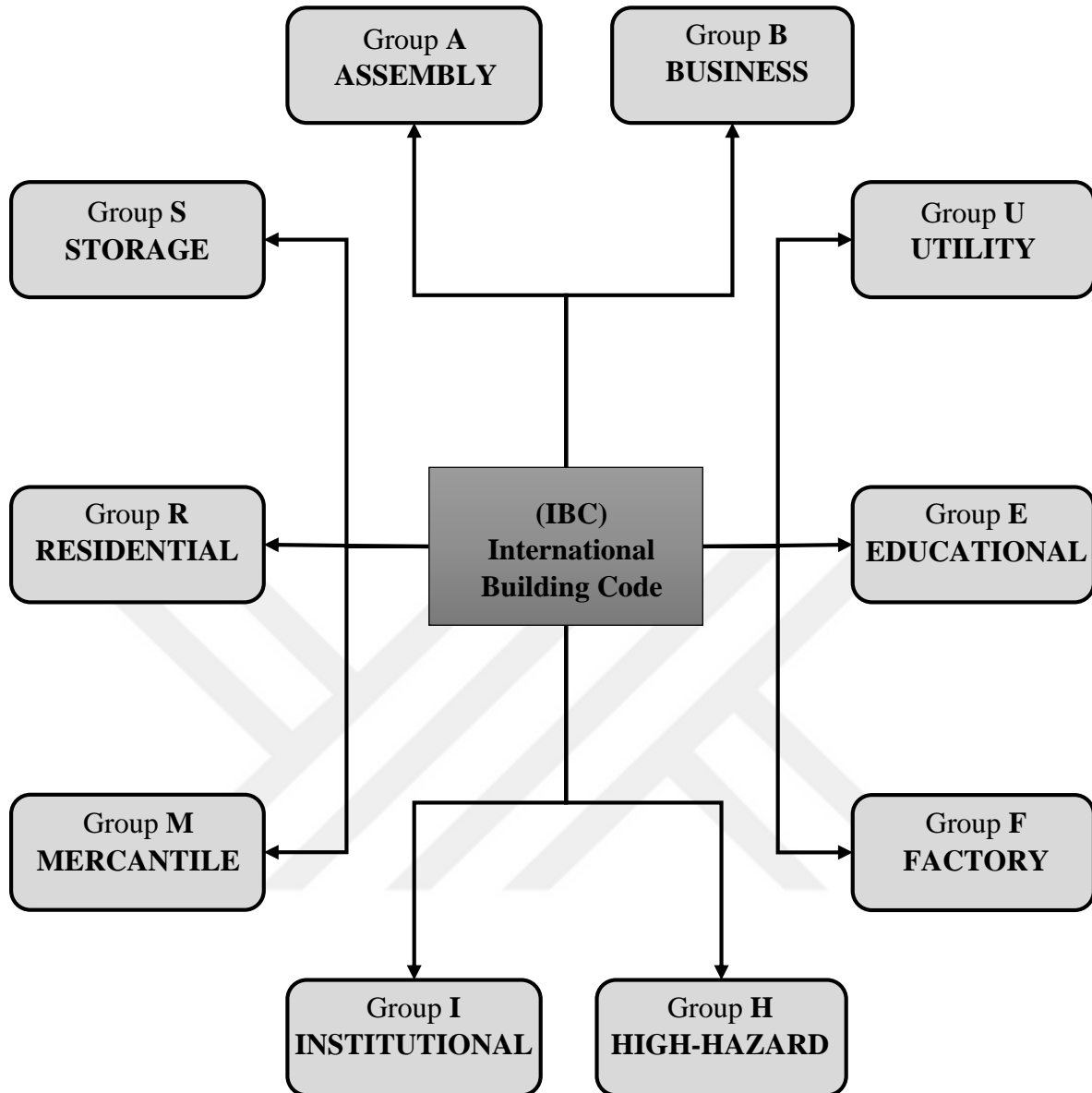
Figure 2. International building code

4- Construction Projects by Fire Resistance: Buildings classified according to their resistance to fire, by means of a safety measure used to measure the ability of the building's structure to resist fire. The national fire protection association (NFPA) has a law for (construction of buildings and safety) where this law contains criteria for this type of construction. Fire-resistant buildings can classified according to building elements, specific materials, or the building as a whole, and according to the materials used, as the use of fire-resistant elements depends on the structural building materials

that are used in columns, pillars, internal and external load-bearing walls, arches, and roof assemblies.

- The first type: fire resistant:

  This form of construction is use in hospitals, high-rise structures, and commercial projects, and it contains all non-combustible building elements with a fire resistance of 3-4 hours.

- The second type: incombustible

  It includes all non-combustible materials, gives resistance to combustion for a period of 1-2 hours and is usually use in hotels, office buildings and middle-rise schools.

- The third type: normal

  This type of construction provides a fire resistance of 0-2 hours, the outer walls of the building are construct with non-combustible materials such as bricks, and the internal structural elements may be combustible. An example of this type of construction is some houses and warehouses.

- Fourth Type: Heavy Wood:

  The exterior walls of the heavy wooden construction should be non-combustible, providing 2 hours of fire resistance, while the interior is solid wood and often without concealed areas; this kind is use to create small commercial buildings, churches, and warehouses.

- Fifth type: wooden frame:

  Wooden floors, ceilings, and walls are always present in wood-framed structures. There is little or no resistance to fire. Residential homes are an example of this type of construction.

Table 2. Construction projects by fire resistance

TYPE	DISCRIBTION	TIME OF RISITANT (Hours)	EXAMPELS OF CONSTRUCTION
First type	Fire resistive	3-4	Commercial projects, hospitals
Second type	Non-Combustible	1-2	Hotels, and schools
Third type	Ordinary	0-2	Residential homes, warehouses
Fourth type	Heavy Timber	2	Small commercial buildings
Fifth type	Wood Framed	0	Residential homes

2.2.4. Project stakeholders

Project stakeholders are people who participate or are affect by project activities. They often have different expectations and needs. The Project stakeholders consist of (Schwalbe, 2015):

1- The project owner.

2- The project manager.

3- The project team.

4- Support staff.

5- Suppliers.

6- The city council and mayor.

7- There may or may not be opponents to a project.

2.3. Project Management

PMI, PMBOK GUIDE (2000), defined that project management is application of skills, techniques, tools and knowledge to project activities and to achieve its requirements. The completed projects management is carry out through a series of processes that are preparation, planning, implementation, monitoring and closing.

Emerson (2006), indicated that project management is a management concerned with the project, which includes activities, skills, knowledge, techniques and tools, in order for the project to reach the expected or desired result of it.

Darwish (2017), add that effective project management refers to the techniques, tools, and skills used in project activities to surpass and meet stakeholders' expectations and needs.

From what mentioned previously, we could define project management as a process for managing a specific work where the work is carry out by the project manager and the work team who possess sufficient experience, skills and knowledge. Projects are manage through a series of processes such as preparation, planning, implementation, monitoring, close the work and hand it over according to the requirements and the needs of stakeholders.

2.3.1. Project management processes

2.3.1.1. Project management process application

International standards define project management processes and recommend their use on the project as individual phases, the project as a whole, or both. These procedures are appropriate for projects in all types of businesses. Project management demands a high level of coordination because each process must be connect and in good alignment with the others, it is sometimes possible to repeat some of the processes in order to meet and define the requirements and needs of stakeholders and reach an agreement regarding the objectives of the project. Project managers are advice to look closely at some of the project's processes and to involve stakeholders with them in order to implement these processes as needed for the project. These processes are not general to all projects, so the project manager has to design the management processes for any project he is responsible for by determining the appropriate processes that must be implement or applied to each process. To ensure the success of the project, the following must be implement (IOFS, 2012):

1- Selecting the required and appropriate processes to achieve the project objectives.
2- Using a specific approach or method to adapt or develop product plans and specifications to achieve the project's criteria and objectives.
3- Commitment to the requirements of clients, the project sponsor, and other stakeholders.

4- Managing and defining the scope of the project within the specified constraints, taking into account the resource needs and risks to provide the project outputs

5- Obtaining good and appropriate support from performance institutions, including the project sponsor and clients.

2.3.1.2. Project management process groups:

The project management groups are divide according to the stages of work, which are (Joenaho, 2016):

1- Initiating process group: It is a group of operations that are concerned at the beginning of the project and that represent the birth of the project, and we summarize these processes accordingly:

    a- Determine the objectives of the project.

    b- Granting the project manager, the necessary powers and authority to start work on the project, in the event that a project manager has not been select, one must be nominate at this stage.

    c- The most important achievement of this stage is the establishment of a project charter (it is to formalize the project and in which the objectives of the project, tasks and works are document). This charter gives the official authority to the project manager to start the project.

    d- Giving clear boundaries to the project, by documenting acceptance criteria and requirements.

    e- Identifying the important stakeholders in the project and documenting them for subsequent reasons and purposes.

2- Planning process group: planning processes is that the evolution of the planning details, are at this stage, setting goals, and the course of action and planning to achieve the goals and scope for which the project began. Planning must be detailed to create basic lines and that based on which can manage the implementation of the project and its ability to control and measure the performance of the project. The important changes that occur during the project life cycle need additional planning processes, and can mention some of the planning processes are:

a- − Defining scope.

b- − Creating work breakdown structure.

c- − Defining activities.

d- − Estimating resources.

e- − Defining project organization.

f- − Sequencing activities.

g- − Estimating activity durations.

h- − Developing schedule.

i- − Estimating cost.

j- − Developing budget.

k- − Identifying risks.

l- − Assessing risk.

m- − Planning quality.

n- − Planning procurements.

o- − Planning communications.

3- Implementing process group: Implementation processes revolve around the plans that were previously developed. These processes used to perform the activities of the project, which specified in the project management plan. It also works on integrating people and other resources to implement the project management plan and thus provide the project outputs. Some of these operations can be mentioned which are as follows:

a- Directing project work.

b- Managing stakeholders.

c- Developing project team.

d- Treating risks.

e- Performing quality assurance.

f- Selecting suppliers.

g- Distributing information.

4- Controlling process group: The project must be effectively controlled and monitored in order to ensure the success of the project. These processes are use it to monitor measure and perform the progress of the project on a regular basis and to identify potential

differences. When the differences in the project plan are identify, preventive and design measures taken in order to meet the project objectives. Some of these operations can be mentioned which are as follows:

a- Controlling project work.

b- Controlling changes.

c- Controlling scope.

d- Controlling resources.

e- Managing project team.

f- Controlling schedule.

g- Controlling cost.

h- Controlling risks.

i- Performing quality control.

j- Administering procurements.

k- Managing communications.

5- Closing process group: There are two different ways to close the project, either by achieving the objectives, and thus it is necessary to ensure the correctness of the outputs in relation to the requirements at the beginning of the project. Alternatively, by canceling the project and this done by accepting the official closing process of the project outputs. In the event that the decision were taken to cancel the project without verifying the correctness of the outputs and before achieving the goals, all the processes that take place will be officially ended. All lessons must be used and document in order to be used as support for future projects.

2.4. Risk management

Risk management is an important component of any organization's strategic management. It is the method through, which businesses systematically address the risks connected with their activities in order to achieve long-term benefits in each activity and across the entire portfolio of activities.

The goal of competent risk management is to identify and mitigate these threats. Risk management attempts to add the most long-term value to all of the organization's activities. It governs the comprehension of the good and negative aspects of all factors that may affect the organization. It raises the chances of success while lowering the chances of failure.

Risk management must be a dynamic, ongoing process that goes across the organization's strategy and execution. It should handle all risks associated with the organization's past, current, and future actions in a systematic manner (IRM, 2002).

2.4.1. Project risk management

Traditional project planning should be consider an extension of project risk management. One of the most important requirements for any project is that it been completed on schedule and within budget. Risks are frequently describe in terms of deviation from expected/desired results, as well as uncertainty. In terms of defining project risk management, the most relevant to it is uncertainty. Within project management, there is a variance in highly undesirable outcomes. Therefore, risk management is often focus on managing control risks and reducing the diversity of outcomes (Hopkin, 2010).

2.4.2. Project cost management

Cost management expresses the processes by which budgeting, estimating costs, and keeping track of them so that a project completed on time and on budget. Project managers need to ensure that their projects are well defined, have a realistic budget and have accurate time and cost estimates (Jainendrakumar, 2015). Project Cost management is (Greenhalf, 2014):

- Ensuring that the project's financial performance goals met.
- Assigning accountability to individuals who are in charge of any component of the project's scope (contractors, designers, managers).
- To stay within budgetary constraints.
- Take the necessary management steps.

2.4.3. Project budget management

The project budget is the entire amount of money allotted to a particular phase of the project during a specific period time. Budget management's goal is to keep project expenditures within the allocated budget while also achieving the project's goals.

The project manager is in charge of estimating the amount of money needed to execute the project. All project costs must be identify and allocated by the project manager. The cost of external and internal human resources, equipment, travel, and supplies must all be factor into the project. The budget should be more precise and specific than the project proposal budget. If the project manager's work begins with a budget that has already been agreed upon, In this instance, the project manager must analyse the budget assumptions as well as those made during the project proposal stage to ensure that the project budgeted in the contract can be completed (PMDO, 2015).

2.4.3. Project quality management

The practices required to ensure that the project meets the needs for which it was create known as project quality management. It also includes all general management operations such as quality improvement within the quality system, quality control, quality planning, and quality assurance that establish the objectives, responsibilities, and quality policy and put them into action. The main project quality management processes can be summarized as follows (PMI, Project Quality Management, 1996):

1- Quality Planning: Defining quality standards specific to or relevant to the project and determining the way to follow these standards.
2- Quality Assurance: The project's overall performance examined on a regular basis to ensure that the project meets the applicable quality criteria.
3- Quality Control: The outcomes of a project monitored to see if they meet the project's quality criteria and to find strategies to reduce the causes of poor performance.

2.4.4. Quality in a project context

"Quality" in project management can be define by what traditional quality management means to present project management in the following definitions:

The strategies, policies, standards, and processes required to regulate projects known as quality management. The goal of quality management is to maximize project success assurance by lowering the chance of project failure, as well as to provide opportunities for continuous improvement for future projects (Checkland & Holwell , 1993).

Quality defined as the capacity to manage a project and produce a service or product in compliance with user expectations on time and on budget while maximizing profit (Flett, 2001).

Quality is one of the project's requirements, which must be compatible with the rest of the other requirements for the management of the project, and know the quality in short as "an ability to manage" (Riis, 1993).

2.4.5. Importance of Quality in Project Management

Quality is an essential and key component of project management in addition to three main things: scope, time and cost. Quality is the most important and decisive factor that may affect the schedule for completion of the budget or project by not agreeing on the quality level with the customer or the quality has not been plan in advance (Goswami, 2015).

The main purpose of the implementation of the project quality management is to prevent the risk in the project delivery schedule and causing the least possible difficulty and achieve the project objectives, the project can measure the value of which was delivered quality level from the client's perspective it (Liberatore & Johnson, 2013).

2.4.6. Tools and Techniques for Providing Quality

Statistical approaches have been employ in research, industry, and business in recent years, and with the development of advanced automated tools for preparing tables, data gathering, and analysis, their practical usage has grown. Furthermore, the literature indicates that these

methodologies give the foundation for making critical and objective decisions based on quantitative facts, and that these modifications provide certain benefits (Bobera & Trninić, 2006):

1. Information operations progress.
2. Better communications.
3. Conversations based on facts.
4. Unanimity on the procedures.
5. Information for the process of changes.

2.5. Project manager experience

The project manager is in charge of overseeing the project's scope, planning, resources, personnel management, and implementation from start to completion. Professionals in project management known as project managers. They are enthuse, well-organize, and goal-oriented, and their strategic role ensures that the project succeeds. They must have the discipline to create achievable goals and carry them to successful completion. They are responsible for project planning, implementation, and closing (Giri, 2019).

The project manager oversees cross-functional teams tasked with completing the project on schedule, on budget, and with satisfactory outcomes. Project managers plan, supervise, monitor, and arrange one or more projects in order to meet corporate objectives and fulfill established requirements, and they report to the project manager, program manager, executive sponsor, SPO manager, or another senior project management position. Project managers are in charge of planning, tracking, and administering an organization's project, as well as directing and identifying important resources to meet project goals. Choosing the right person for the project manager role is critical to the success of the project. (Crawford, Brewin, Crawford, & Pennypacker, 2008).

2.5.1. Essential Skills of a Project Manager

Project managers must possess certain skills that are important for the optimal implementation of the project. These skills can be summarize in the following points (Giri, 2019):

1- Planning: Setting and establishing goals is one of the most important leadership abilities that a project manager can have. As a result, planning is define as the capacity to identify objectives and then devise strategies to achieve them. Therefore, the project manager needs to understand and know the project requirements in depth and then plan accordingly and the project goals are clearly define and then an agreement is reached with the client and from then deliver this goal to the project.
(Patterson, Nicola, Mavin, & Turner, 2012) In fact, consider planning to be a leader's creative expression. Among the most important planning responsibilities are:

- Define and clarify project objectives.
- Develop the project plan.
- Develop the project schedule.

2- Organizing: Organizing is the process of preparing the project team structure. At this stage, project managers must construct the team structure based on the organization's available resources, including all part-time and full-time human resources. Organizing entails, the following tasks:

- Determine the organizational structure of the project team.
- Define roles and positions.
- Define tasks to be perform internally and tasks to be perform by consultants or subcontractors.
- Accurately define roles for all human resources, define team hierarchy, and delegate authority.
- Create an environment in which people are highly motivated.

3- Leadership: Project managers must be capable of leading a group of individuals who are working toward a common goal. Because these personnel come from several functional specialties, their leader leads them. The success of the project manager in

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managing the project depends on his competence, particularly leadership that incorporates intellectual abilities, managerial focus, and emotional intelligence.

Decision-making abilities, intelligence, and communication skills are essential attributes of any leader (Drucker, 2010). A project manager's important leadership abilities include the following:

- Coordinate activities across different organizational function.
- Inspire the people assigned to the project.
- Involves and empowers the project team.
- Establishes guidelines and standards for what needs to done.
- Continuing to motivate the team through transparency in the system and setting clear goals so that all team members are well informed and work in the best way
- Creates a supportive working environment.
- Fosters motivation through recognition.
- Leads by making things happen.
- Defines high expectations, fun and determines the degree of confidence.
- He has self-confidence and inspires those with him.
- Conflict resolution as happens in most of the project.

4- Controlling: It is all about staying on track with the project, and any plan will run into issues throughout the execution phase. The following are some of the most important control functions:

- Measuring project progress.
- Defining project baselines.
- Project status reporting.
- Track actual progress and compare with planned.
- Takes immediate action in the event of a change in costs or progress.

5- Management Knowledge and Skills: Some managers believe that certain management abilities are more important than others, but this skill relates to managing contracts, time, quality, finance and inventory, some of the management skills include:

- Research and development.
- Finance and accounting.

- Sales and marketing.

- Manufacturing and distributions.

- Strategic planning.

- Tactical planning.

- Operational planning.

- Organization structures.

- Organizational behaviour.

- Personnel administration.

- Managing work relationships.

6- Technical knowledge and skills: A project manager never needs to know how everyone's tasks are being carry out within a project. However, he does need to value all the tasks, processes being perform and have the ability to challenge others with confidence at a level of comprehension that is well-informed Knowledge of construction equipment, computer skills, technical tools, and project management tools are all technical elements of the project management function.

7- Team Building: A project manager must have the ability to build a project team, as team building is a necessary task to get every member of the team to share knowledge, understand why decisions made, enhance learning, and communicate key expectations. In short, it is the ability to work with others and through them (Kwakye, 1991). The project manager is a key element in the success of the project through:

- Ability to develop people.
- Good interpersonal skills.
- Stresses the value of self-improvement.
- Committed to developing and training people.
- The project is use to add experience to everyone working on it.
- Tasks that require individuals give them an extension of their knowledge.
- Tasks allow people with less experience to learn from those who have more.
- All individuals believe that they have value to the organization.
- It encourages people to make decisions, take initiative, and take chances, which leads to possibilities for growth and learning.

8- Communication Skills: Communication indicates that project managers have the ability to persuade others, to listen, and to understand. Frequent and effective communication is critical. Some of the communication skills include:

- The high level of communication is particularly important early in the project.
- Good written and oral communication skills.
- Spend more time listening than talking.
- Establishing continuous communication with the client.
- Communication must be honest and timely.
- Effective communication builds trust and establishes credibility.
- Provide timely feedback to clients and team.
- Create an atmosphere that promotes appropriate and open communication at the right time.
- Regularly communicate with sub-contractors and the project team, clients and top management own.

9- Interpersonal Skills

- Good interpersonal skills are essential.
- Develop a relationship with everyone on the project team.
- Try to get to know each individual's personal interests without interference.
- Ask open-ended questions and pay attention.
- When special situations emerge, empathize with individuals.
- Maintain relationships throughout the project's duration.
- Use interpersonal skills to try to sway others' behaviors and thoughts.
- Deal with disagreements using appropriate interpersonal skills.

10- Ability to Handle Stress

- Do not be alarmed; keep calm.
- The ability to adapt to changing conditions.
- Serve as a go-between for the project team and upper management or the client.
- Should have a great sense of humor.

11- Problem Solving Skills: Project managers must be able to make educated decisions based on their experience and data in order to observe results and make critical decisions that lead to problem solving as they arise. (Skoyles, 2011).

Early detection of a potential problem or problem is critical, and project managers should encourage project team members to identify and fix problems as soon as possible.

12- Time Management Skills

- Have self-discipline.
- Be able to prioritize.
- Show a willingness to delegate.

2.6. Government support

Support defined according to the Encyclopedia Britannica as the indirect or direct governmental expense, directed concession, or economic right granted to government units, individuals, or private projects for achieving general goals (Aliwa, 2016). The WTO defines subsidies as a broad approach related to possible forms of support, including tax concessions, direct payments, services and the provision of goods. Whether they are to producers (in the form of subsidies to some industry, especially those associated with export, or subsidies to some elements of inputs) or to consumers (giving the government Commodity prices are lower than the prevailing market prices (WTO, 2006).

Government support can be define as financial assistance provided by any public organization or the government, whereby a benefit is achieved for those who receive it, in order to achieve social and economic goals, and government support is one of the means used by the state to influence economic life (Mahouder, 2012).

Through research around the world, we show that SMEs play an important role in the economy (Chittithaworn, Islam, Keawchana, & Yusuf , 2011). Small and medium-sized enterprises have a key role in overcoming economic and social challenges characterized by high rates of poverty, income inequality and high unemployment rates, especially in developing countries (Machirori & Fatoki, 2013). Despite the contributions SMEs have made to the economy, they still suffer

from low performance and a high failure rate that does not translate into growth (Rankhumise & Masilo, 2017). Government support is to motivate companies to provide goods and services to consumers at reasonable or subsidized prices to be lower than international prices, and energy subsidies to producers or investors in order to help protect local industries from competition with their foreign counterparts and enhance their export competitiveness (Ragab, 2012).

2.6.1. Types of government support

There are several types of government support, which can be classified according to the nature of the goal that the support seeks to achieve and according to the mechanism of the donor of the support, and we will explain them as shown in the table below (Al-taei, 2014):

Table 3. Types of government support

	Support types	Donor	The objective of the support
1	Direct primary distribution support	Direct cash government support for individuals and production units	Redistribution of national income and increase the purchasing power of individuals
2	Indirect distribution primary support	Government support is the provision of goods and services at a price less than their cost	Indirectly affecting the redistribution of national income
3	Direct transfer support	Government support that contributes to diverting the purchasing power path towards the individuals who benefit from it	An increase in individual cash incomes, such as Social Security
4	Indirect transfer support	Government support that contributes to transforming the purchasing power path by giving free goods to individuals who benefit from the support	Indirectly increasing real incomes such as credit reduction subsidies
5	Supplementary government support	Government support provided by the state in relation to social importance	Satisfy the basic needs of the population, such as providing health and educational services
6	Intrusive government support	Government support provided for the production of a material good or for the purpose of directing individual productive activity	Strengthening the country's economic path to transform from a social economy to a market economy

7	Direct support	Government cash support for the purpose of maintaining the purchasing power of consumers	Stabilizing prices and reducing the effects of inflation
8	Indirect support	Government support represented by the difference between the cost of producing goods and services in the public sector	Donation some projects and companies loans with little or no interest and exempting them from taxes and customs
9	Economic credit support	Cash support provided by the government to producers for the purpose of reducing the prices of goods and making them accessible to everyone	Achieving social justice between individuals by reducing the differences between low and high income earners
10	Social credit support	Governmental monetary support provided to state employees and that this support is allocated from the proceeds of taxes that target all citizens	Limit price hikes

2.6.2. Pros and Cons of Subsidies

There are some pros and cons of government support, and we will mention them and summarize them in the following points (Boyce, 2020):

A- Benefits of support: When evaluating the benefits provided by subsidies, we must take into account the effects of the subsidies, as they frequently include trade-offs. As a result, every advantage that the subsidy provides has an equal and opposite negative effect. What we need to figure out is whether these benefits are worth the price.

1- Help the poor: Benefits such as unemployment benefit or housing benefit can help the poor out of poverty. Therefore, providing a lifeline to those who do not have a job or a source of livelihood, they may be able to return to work and stand on their feet, which in turn may provide income for the government in the long term.

2- Positive externalities: For example, subsidized student loans may create a better-educated workforce so companies can take advantage of these highly skilled workers. This subsidy may affect the government in the short term, but in the long term, it may pay for itself through tax revenues and higher economic growth.

3- Raise supply or demand: In the United States, for example, the government subsidizes milk production, encouraging farmers to increase output. Because of the increased output, there was an oversupply of milk, forcing suppliers to lower prices, which could stimulate demand.

4- Preventing industry decline: Some industries encounter difficult market conditions, particularly when competing internationally. Governments, for example, consider steel manufacturing to be an essential for defense; therefore, they strive to safeguard it from cheaper overseas competition. Governments sponsor other industries that are unable to compete in order to maintain jobs or items produced in that industry.

5- Reduce negative externalities: The government can direct demand for a certain industry if it subsidizes it. Governments, for example, frequently finance public transit like trains and buses. Because it is less expensive for the consumer and minimizes negative emissions.

6- Protect jobs: Supporting the industry can help it avoid deterioration and, as a result, the rise in unemployment associated with it. They assist industries to continue running and hence protect jobs by financing and supporting them through subsidies. Subsidies are frequently required in the long term.

B- Negatives of support: When considering the drawbacks of government subsidies, it is crucial to keep the trade-offs in mind. In addition, it must be recognize whether the consequence of increasing taxes is worth the cost and advantages. In addition, it is necessary to find out if these costs are worth it.

1- Dependency: Social benefits such as unemployment and housing can create a situation of dependency where if the recipient does not benefit from the work he will not be looking for work. Such a case considered a government failure.

2- Create inefficiencies: Subsidies reduce incentives to create efficiencies and reduce costs. Companies that rely on government grants known to operate with taxpayer money and can be unprofitable.

3- Excess supply: Subsidies, for example, on the agricultural sector can create perverse incentives as they guarantee farmers a specific and guaranteed income because the government represents the purchaser of farmers' goods.

4- Higher taxes: The rise in taxes is one of the most negative aspects of GS, which overlooked and negatively affects taxpayers, and its impact may be in the short or long term.

5- Difficulty removing: Once a subsidy provided, it is extremely difficult to remove it because the recipients exert pressure on government officials to keep the support in place.

6- Measuring success: Some subsidies are beneficial, while others have severe negative consequences. When government action is required to offer subsidies, however, it is impossible to assess whether a net loss or benefit exists.

2.7. Constriction industry

The construction industry defined as all companies operating primarily in the field of construction as builders, operators, general contractors, construction by specialized trades, and heavy construction (utility systems, highways, and airports). It also includes companies that work in dividing land for construction sites and preparing sites for new construction. Construction work may include repairs, new works, alterations, maintenance, or additions. Construction work is often described as non-residential (infrastructure projects, government and commercial buildings) versus residential (home construction), or by source of financing (private versus public) (Conway, Crandall, Ryan, & Khalil, 2005).

2.7.1. Precast concrete industry

Precast concrete is a type of construction material made by pouring concrete into a reusable mold or "form," curing it in a controlled environment, then transporting it to the job site and lifting it into position (tilt up). Standard concrete, on the other hand, is poured into site-specific structures and cured there (Muteb, 2020). Precast, also known as (prefabricated) construction refers to structures in which the majority of structural components are standardized and manufactured in facilities (cast and cured) away from the building, then transported to the site for assembly. These components are made using industrial processes based on mass production

in order to construct a large number of buildings quickly and at a low cost (Ahmed & Mandal, 2020).

2.7.2. Limitations of using prefabrication technology in Developing Country

Prefabrication technology is not easily change when compared to other known technologies because it is a knowledge-based production technology rather than a product-based or consumption-based technology. The conditioning of prefabricated buildings in developing countries mainly affected by weather and labour shortages, housing demand, construction process efficiency, labour cost as well as energy consumption and waste minimization. Prefabricated buildings have inherent social, environmental and economic benefits, but the demand for them is relatively low in construction industries worldwide. The reason for this is the prevailing local conditions that differ from one country to another. The use of prefabricated buildings is determined as an option, so the decision to use this technology influenced by the balance between potential drawbacks and benefits. Potential barriers are construction market risks and industry technology practices, industry professionalism, supply chain management and logistics (Haile, 2018).

2.7.3. Advantages and limitations of prefabricated construction

The main advantages of prefabricated structures are the assembly of prefabricated construction elements on the site, and it characterized by rapid implementation, reduced cost and bearing self-loads. So it took precedence over its use over the industry through the accurate and good implementation of prefabricated construction methods, where advantages can be obtained in many broad areas and among this increases buildability, reduces cost, reduces social and environmental impact, increases quality, reduces schedule, and improves safety (Torre, et al., 1994). In addition, we will mention the main advantages of prefabricated construction below:

1- Speed of construction: Precast is superior to traditional construction methods as construction speed is a major consideration in construction projects. Precast components are manufacture in the factory while foundation works cast on site at the same time. From here, we see that precast increases the overall construction speed by allowing parts

of the structure to be at an early stage while construction continues on the upper floors of the building. When calculating the overlapping benefits of the total investment, we see that a building completed 6 months before its implementation by traditional methods (Torre, et al., 1994).

2- Reduced construction cost: In some cases, it is possible to reduce capital costs by up to 20%. Prefabricated construction specialists generally agree that modular construction can save between 5% and 10% of a project's total cost (Torre, et al., 1994).

We mention some of the elements that lead to cost reduction, including reducing the costs of skilled labor and working hours on site due to the transfer of work on site to the manufacturing workshops in the factory. Reducing project-working hours minimizes the requirement for project management while also shortening the construction process. Manufacturing the modules in a prefabricated construction plant reduces project labor costs by reducing the number of labor and equipment required at remote construction sites, as well as the demand for housing and other living facilities (Tesema).

3- Low maintenance cost: Vinyl used to paint the walls and structures of prefabricated buildings, which characterized by being anti-corrosion or highly durable steel surfaces that maintain their attractive appearance for years. There is no need for the repair associated with standard drywall construction and continuous painting as well, while traditional construction can be damage or deformed due to high humidity levels, while precast walls can be design to withstand various changes in environmental conditions. So if use enclosure in a manufacturing facility or office environment the walls will serve for many years, with no deterioration (Dong, et al., 2016).

4- Demolition or Deconstruction cost: Demolition is an engineering term where a structure or a building which has to be removed from the site because it has reached the end of its useful life demolished, with the help of hand tools or heavy equipment it is reduced to debris and rubble. However, in some cases, some materials such as steel and concrete are recycled and the rest taken to landfills (Johnson, 2007). There are many factors to consider when planning demolition projects, key factors being the sequence of work, type of construction and scheduling, safety issues, unforeseen conditions, cost,

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protection of adjacent structures, site access, material disposal, recycling and reuse. Deconstruction known as reverse build, no build or green demolition. It is the dismantling of a building to recover maximum materials for recycling and reuse. Deconstruction has many economic, environmental and social benefits. Generally, prefab erected buildings have a high potential for dismantling while conventional construction only uses demolition to remove the structure which makes prefab construction highly preferred (Tesema).

5- Reduced Social and Environmental Impact: Because of the possibility of modular construction to lessen the environmental and social impact of construction projects, many countries are concerned about the possible impact of a project on their infrastructure and local environment. The imported labor may cause disruption to the local economy, so the project can be cancel or the acceptable imported labor limit can be reach (Tesema). The huge workforce that is demanded and brought into a country can cause political turmoil, rapid inflation and possibly cause an undesirable change to the social structure of that country (Torre, et al., 1994).

6- Increased possibility of construction: Construction in remote sites is a difficult construction process and is a major advantage of prefabricated construction as an alternative to traditional construction, projects in remote locations using traditional construction are often consider futile but feasible with prefabricated construction. On distant and dangerous sites, prefabricated construction can help overcome resource constraints. A shortage of on-site resources such as space, labor, and a suitable building environment referred to as "site resource constraints." (Torre, et al., 1994).

7- Limitations of prefabricated construction: Just as prefabricated construction has benefits, it also has drawbacks, so this section discusses the main drawbacks that have been identify from the literature, and these drawbacks include the need for reduced adaptability to changes, additional materials, increased transportation cost, additional construction efforts, additional coordination of activities. However, most of all it is the increased cost of design (Tesema). In addition, the additional working hours required for the engineering and design of the turnkey project increased by approximately 10%, the cost associated with procurement increased by up to 20%, the costs of transportation

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and manufacturing activities increased by about 17% and 13%, respectively, and the cost of transportation About 1-2% of the project value (Torre, et al., 1994).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction

Goundar (2012), define the research methodology, is a science of studying the methods of conducting research scientifically, as it considered a method for solving a particular research problem systematically. It the different steps that this research adopts to study a specific problem in his research with the logic behind it. It is necessary for this study to know the methodology in addition to knowing the methods of research techniques as well. Studies not only need to know specific tests, develop indicators, or how to apply certain research techniques, standard deviation, chi-square, median, or mean, but they also need to know which techniques or methods are relevant to their research and which are not. Inappropriate and irrelevant, what does it refer to, what does it mean and why.

Reviewing the study problem and then reviewing previous studies in the first chapter, for that this chapter has been written to describe the approach and research sample, as well as the study tool that was used and how to set up, select for a statistical method to analysis the data, and extraction results.

3.2. Research design

Research design is a plan for collecting and using data to obtain the information required for the study with sufficient accuracy, to be able to test hypotheses correctly. It can be express as the search structure. It is a plan sufficient to cover all aspects of the study's research (Creswell, Qualitative, quantitative and mixed methods approaches, 2014). In this study, a descriptive research design was use, given that the research objective was the impact of the role of project management and government support on the project economy.

3.3. Population and sampling

The study targeted three factories specialized in prefabricated construction in Iraq, and due to the lack of work, many of their employees were reduced, as the number of employees previously was approximately 400 employees, as shown in the following table:

Table 4. Number of employees in precast factories

	Factory name	Number of employees before the study	Number of employees during the study
1	Al-Kut precast	523	34
2	Al-Burhan factory	391	26
3	Babylon company for precast building	486	30

From this table above, before was the total employees in the precast factories equal to 1400, and now equal to 90. For that, there is a significant decrease in the number of employees in the project. The project managers stated that the reason for this is the lack of work in the government sector, in addition to the high cost of raw materials and services for the project, which leads to a high cost of constructing buildings with the precast construction. Therefore, it is difficult competition with the traditional construction in the private sector. Lack of business, forcing project owners to not run the project completely because the project needs a large number of employees, and thus operating all production lines, and therefore more cost, so they all had to reduce the number of employees and not operate some production lines and sometimes sell some of them. One of the project managers suggests that he will close his project if the work continues in this low form, and may sell it. The others will continue to work on the project so that the project does not reach to complete extinction.

3.4. Sample size

This research use Steven K. Thompson (Thompson, 2012) equation to calculate the sample size from the next formula:

$$ n = \frac{N * p(1 - p)}{[[N - 1 * (d^2 \div z^2)] + p(1 - p)]} $$

Where is p= probability of reject = 0.5 (50%), 1-p = 0.5 (50%) is probability of fail to reject, for that there is 50% for reject or fail to reject the hypothesis. The confidence interval equal to 95% it chosen. from this we conclude that Alpha equal to 0.025 two tail, that's mean is the half distance between the critical values called margin of error and its equal 0.05 = d. finally can find Z-value in confidence level at 95% from z table it equal to 1.96, based on the total population (N) = 90.

3.5. Data collection methods

For the preparation of this study, and achieve their goals, two types of information sources, which have been mention below:

1- Primary sources**:** In preparing this thesis, many sources of information that were collected for the purposes of the study by reviewing literature and previous studies and reviewing books and references related to the subject of the study, and taking into consideration the scientific materials, reports and information available on the approved websites.

2- Main sources**:** the reliance on key information obtained from the questionnaire form, which being prepared and distributed to the study sample. In addition, by conducting interviews with project staff

3.6. Research questionnaire

In questionnaire, the primary tool for data collecting is the questionnaire. It is a collection of standardized questions, sometimes referred to as items, which follow a predetermined format

in order to collect individual data on one or more specific subjects. (Lavrakas, 2008). Also (Kurnar, 2005) state the questionnaire is a low cost tool that saves time, financial and human resources. In addition, the characteristics it provides a greater degree of anonymity, in some cases raised questions sensitive so it helps to increase the probability of getting accurate information.

As mentioned previously, the main study tool is the questionnaire form, where the questionnaire form divided into three sections in order to study the case of the effect of two independent variables and their impact on a dependent variable, and each of these sections measures the state of its own variable. The section of project economy had 11 questions, project management section had 18 questions and government support section had 10 question. This research use Likert scale measurement, to describe the data in the questionnaire, measure it as (1) = strongly disagree, (2) = Disagree, (3) = Neutral, (4) = Agree, (5) = strongly agree.

The questions of project management taken from previous studies (Harrington, J , Preziosi, C, & G, 2001), (SoGoSurvey, 2011) and (Chen, 2013). The other questions in project economy and government support are make it by the researcher after reading these sources (Akwei, Cynthia , Damoah, S , & Amankwah-Am, 2020), (Williams, 2016), (Zhongming, et al., 2017), (Albasri, 2007), (Esmail, 2018), (Oller, 2007) and (Freund & Pesme, 2021). From these sources, find there an impact from government support on projects economy (success or failure). Before give this questionnaire to the simple size, the researcher gave this questionnaire to 20 respondents to check the reliability and validity of the questionnaire. The result of reliability and validity acceptance, after that the researcher gave it to the respondents.

As the respondents live in Iraq and most of them speak the native language which is Arabic language, for that the researcher translate the questionnaire from the English language to the Arabic language as it's showed in Appendix A part 2.

3.7. Data analysis methods

The data obtained from the study tool (the questionnaire) into the statistical program (the Statistical Package for Social Sciences-SPSS) and (Microsoft office-Excel), and these data processed according to tests and analyzes that achieve the goal of the study, where used the following statistical methods:

1- Cronbach's Alpha: This test used to determine the reliability of the questionnaire before distributed to the study sample.

2- Pearson correlation coefficient: This test used to determine the validity of the questionnaire before distributed to the study sample.

3- Steven K. Thompson equation: this test used to determine the sample size from the population of this study.

4- Successive intervals method: This method was used to procedure the obtaining equal intervals from category data, and make a transformation from Ordinal scale to interval scale.

5- Descriptive statistics analysis: this analysis used to summarize or describe the characteristics of data set or a sample, such as a standard deviation, variable's mean, or frequency. Inferential statistics can help us understanding the qualities of a data sample's elements as a whole (Hayes, 2021). It is unimaginable to have an economic problem that does not depend on statistical analysis, and descriptive statistics provide simple yet powerful insight to economic agents and enable them to make more inform decisions (Naghshpour, 2015).

6- Multiple linear regression analysis: This analysis was used to find out to what extent the dependent variable (project's economy) is affected by the independent variables (project management and government support) as the formula below:

$(y_i = \beta 0 + \beta_1 x_1 + \beta_2 x_2)$

y_i = dependent variable (project economy)

x_1 = independent variables (project management)

x_2 = independent variable (government support)

β_0 = y-intercept (constant term)

$\beta_1 x_1$ = the regression coefficient (β_1) of the first independent variable (x_1)

$\beta_2\, x_2$ = the regression coefficient (β_2) of the first independent variable (x_2)

7- Independent samples t-test analysis: This analysis used to find the difference between the samples of study. The dependent variable (project's economy) of the PCF be compared, and the comparison will be to find out which projects are more or less affected by their economy than the rest of the projects.

CHAPTER FOUR

ANALYSIS, RESULTS AND DISCUSSIONS

4.1. Introduction

This chapter presents the results, discusses data analysis and interpretation of the study, as this study focused on the determinants of the project economy (the failure or success of the project), and these determinants were variables represented by (project management and government support). This study targeted 90 respondent but only 75 questionnaires was answered and returned, for this the response rate of questionnaires is 83%, this response rate was satisfactory as Cooper and Schindler (2003) state the total sample size is sufficient to represent the opinion of the entire population if the response rate between 30% to 80%.

4.2. Survey

In order to determine the level of impact of project management and government support on the success of the project (the project economy), therefore, questionnaire forms were prepared to collect information and know the extent of the impact of these variables. For this research was prepared a questionnaire form and it was divided into three sections (project management, government support and project economy), and each of these variables measures the extent of its impact on the project in terms of its success or failure, and the last variable was to find out the economic status of the project. A Likert scale was used for this questionnaire, which is based on (5) different points ranging from "strongly disagree" to "strongly agree" in the questionnaire. The survey is provided in APPENDEX-A.

Likert Scale has the rating mechanism as follows:

1- Strongly disagree
2- Disagree
3- Neutral
4- Agree
5- Strongly Agree

4.3. Reliability and validity test

A validity and reliability test done on the questionnaire before it given to the respondents. A questionnaire given to twenty respondents, and the results were as follows:

4.3.1. Reliability test

A- Reliability test for all the variables

Table 5. Reliability statistics for all variables

Cronbach's Alpha	Number of Items
0.948	39

When the reliability was tested with Cronbach's alpha coefficient for all the sections in the questionnaire, it's was equal to 94.8% for 39 items, this is a high reliable value (Cronbach's Alfa > 0.70).

B- Reliability test for project economy

Table 6. Reliability statistics for project economy

Cronbach's Alpha	Number of Items
0.828	11

When the reliability tested with Cronbach's alpha coefficient for all the project economy section in the questionnaire, it has was equal to 82.8 % for 11 items; this is a high reliable value (Cronbach's Alfa > 0.70).

C- Reliability test for project management

Table 7. Reliability statistics for project management

Cronbach's Alpha	Number of Items
0.959	18

When the reliability tested with Cronbach's alpha coefficient for the entire project management section in the questionnaire, it has was equal to 95.9 % for 18 items; this is a high reliable value (Cronbach's Alfa > 0.70).

D- Reliability test for project management

Table 8. Reliability statistics for government support

Cronbach's Alpha	Number of Items
0.874	10

When the reliability tested with Cronbach's, alpha coefficient for all the government support section in the questionnaire, it has equal to 87.4 % for 10 items, this is a high reliable value (Cronbach's Alfa > 0.70).

4.3.2. Validity test

A- Validity test for project economy

Table 9. Validity test for project economy

		Total PE				Total PE
Q1	Pearson Correlation	0.631^{**}	Q7	Pearson Correlation	0.553^{*}	
	Sig. (2-tailed)	0.003		Sig. (2-tailed)	0.011	
Q2	Pearson Correlation	0.635^{**}	Q8	Pearson Correlation	0.683^{**}	
	Sig. (2-tailed)	0.003		Sig. (2-tailed)	0.001	
Q3	Pearson Correlation	0.763^{**}	Q9	Pearson Correlation	0.751^{**}	
	Sig. (2-tailed)	0.000		Sig. (2-tailed)	0.000	
Q4	Pearson Correlation	0.464^{*}	Q10	Pearson Correlation	0.519^{*}	
	Sig. (2-tailed)	0.039		Sig. (2-tailed)	0.019	
Q5	Pearson Correlation	0.493^{*}	Q11	Pearson Correlation	0.699^{**}	
	Sig. (2-tailed)	0.027		Sig. (2-tailed)	0.001	
Q6	Pearson Correlation	0.549^{*}	Total PE	Pearson Correlation	1	
	Sig. (2-tailed)	0.012		Sig. (2-tailed)		

The items result of project economy was check it with Pearson's correlation table and the study find all the results less than the value in Pearson correlation table, then these results accept it. From the table above, which result had (*) should $p<0.05$ and for results which came with (**) should $p<0.01$, for that all the questions for the dependent variable (project economy) have a significant correlation between each other.

B- Validity test for project management

Table 10. Validity test for project management

		Total PM				Total PM				Total PM
Q12	Pearson Correlation	0.517^{*}	Q18	Pearson Correlation	0.850^{**}	Q24	Pearson Correlation	0.850^{**}
	Sig. (2-tailed)	0.019		Sig. (2-tailed)	0.000		Sig. (2-tailed)	0.000
Q13	Pearson Correlation	0.735^{**}	Q19	Pearson Correlation	0.916^{**}	Q25	Pearson Correlation	0.872^{**}
	Sig. (2-tailed)	0.000		Sig. (2-tailed)	0.000		Sig. (2-tailed)	0.000
Q14	Pearson Correlation	0.910^{**}	Q20	Pearson Correlation	0.689^{**}	Q26	Pearson Correlation	0.881^{**}
	Sig. (2-tailed)	0.000		Sig. (2-tailed)	0.001		Sig. (2-tailed)	0.000
Q15	Pearson Correlation	0.830^{**}	Q21	Pearson Correlation	0.827^{**}	Q27	Pearson Correlation	0.817^{**}
	Sig. (2-tailed)	0.000		Sig. (2-tailed)	0.000		Sig. (2-tailed)	0.000
Q16	Pearson Correlation	0.792^{**}	Q22	Pearson Correlation	0.671^{**}	Q28	Pearson Correlation	0.738^{**}
	Sig. (2-tailed)	0.000		Sig. (2-tailed)	0.001		Sig. (2-tailed)	0.000
Q17	Pearson Correlation	0.780^{**}	Q23	Pearson Correlation	0.793^{**}	Q29	Pearson Correlation	0.636^{**}
	Sig. (2-tailed)	0.000		Sig. (2-tailed)	0.000		Sig. (2-tailed)	0.003

The items result of project management was check it with Pearson's correlation table and the study find all the results less than the value in Pearson correlation table, then these results accept it. From the table above, which result had (*) should $p<0.05$ and for results which came with (**) should $p<0.01$, for that all the questions for the independent variable (project management) have a significant correlation between each other.

C- Validity test for government support

Table 11. Validity test for government support

		Total GS				Total GS
Q30	Pearson Correlation	0.694**		Q35	Pearson Correlation	0.717**
	Sig. (2-tailed)	0.001			Sig. (2-tailed)	0.000
Q31	Pearson Correlation	0.907**		Q36	Pearson Correlation	0.676**
	Sig. (2-tailed)	0.000			Sig. (2-tailed)	0.001
Q32	Pearson Correlation	0.466*		Q37	Pearson Correlation	0.467*
	Sig. (2-tailed)	0.038			Sig. (2-tailed)	0.038
Q33	Pearson Correlation	0.851**		Q38	Pearson Correlation	0.669**
	Sig. (2-tailed)	0.000			Sig. (2-tailed)	0.001
Q34	Pearson Correlation	0.537*		Q39	Pearson Correlation	0.799**
	Sig. (2-tailed)	0.015			Sig. (2-tailed)	0.000

The items result of government support was check it with Pearson's correlation table and the study find all the results less than the value in Pearson correlation table, then these results accept it. From the table above, which result had (*) should $p<0.05$ and for results which came with (**) should $p<0.01$, for that all the questions for the independent variable (government support) have a significant correlation between each other.

4.4. Sample size

The research target 3 factories (90 respondent) but only 75 answered the questionnaire, this study use Steven K. Thompson (Thompson, 2012) equation to calculate the sample size from the next formula:

$$n = \frac{N * p(1-p)}{[[N-1 * (d^2 \div z^2)] + p(1-p)]}$$

Where:

Probability (P): there is 0.5 chance of rejecting the null hypothesis (there is an effect of project management and government support on the project economy) and 0.5 of accepting the null hypothesis (there is no effect of project management and government support on the project economy). For that p=0.5=50%.

Confidence Interval for a population proportion (fail to reject area) it's equal to 0.95 for that the error proportion (d) (reject area) equal to 0.05, from the confidence level table was take the Z-value at 95% its equal to 1.96,

From the above, the following appears:

p (probability) = 0.5

d (error proportion) = 0.05

Z (z score) = 1.96

N (population size) = 90

After solving the equation according to the above-mentioned data, the sample size found equal to (73.07) = (74)

4.5. Questionnaire data percentage

4.5.1. Effect of government support on project's economy

The respondents were required to give their opinion as regards to the extent to which GS affects the project's economy, and the result show in the table below:

Table 12. Effect of project management on project economy

SA- Strongly agree   A-Agree   N-Neutral   D-Disagree   SD-Strongly disagree

	GOVERNMENT SUPPORT	SA %	A %	N %	D %	SD %	TOTAL %
1	There is no government support on the land on which the project is being built	57.3	41.3	1.3	00	00	100
2	There is no government support for raw materials	49.3	45.3	5.3	00	00	100
3	There are no taxes levied on the project	48.0	42.7	8.0	00	1.3	100
4	There is no government support for project bills	50.7	41.3	6.7	1.3	00	100
5	There is no government support for the implementation of the project's services such as (water and electricity)	49.3	49.3	1.3	00	00	100
6	There is no government protection for foreign exchange fluctuations	52.0	42.7	5.3	00	00	100
7	The government does not place controls on setting up projects using prefabricated materials	34.7	48	13.3	1.3	2.7	100
8	The government does not support strategic projects after force majeure conditions such as wars have ended	56	36	5.3	2.7	00	100
9	The government does not provide loans for this type of project	32	54.7	12	1.3	00	100
10	There is no government support for the interests of loans granted to this type of project	48	37.3	13.3	1.3	00	100

In the study 57.3% strongly agreed that is no government support on the land on which their project built, 41.3% agreed, while 1.3% were neutral. 49.3% strongly agreed that is no government support for raw materials on their project, 45.3% agreed, while 5.3% were neutral. 48% strongly agreed that no taxes levied on their project, 42.7% agreed, while 8% were neutral and 1.3% strongly disagree. 50.7% strongly agreed that is no government support for their project bills, 41.3% agreed, while 6.7% were neutral and 1.3% disagreed. 49.3% strongly agreed that is no government support for the implementation of their project's services such as (water and electricity), 49.3% agreed, while 1.3 were neutral. 52% strongly agreed that is no government protection for foreign exchange fluctuations, 42.7% agreed, while 5.3% were neutral. 34.7% strongly agreed that is the government does not place controls on setting up projects using prefabricated materials also 48% agreed while 13.3% were neutral, 1.3% disagreed and 2.7% strongly disagreed. 56% strongly agreed that is the government does not support strategic projects after force majeure conditions such as wars have end, 36% agreed, while 5.3% were neutral and 2.7% strongly disagreed. 32% strongly agreed that the government does not provide loans for a type of their project, 54.7% agreed, while 12% were neutral and

1.3% strongly disagreed. 48% strongly agreed that is no government support for the interests of loans granted to this type of their project, 37.3% agreed, while 13.3% were neutral and 1.3% strongly disagreed. From these questions, most of the respondents agreed that the project would not receive any GS, this study take this variable to prove there is no government support for these type of project.

4.5.2. The project's economy

Respondents asked to give their opinion regards to the status of their project's economy, and show the result in the table below:

Table 13. The project's economy

	PROJECT'S ECONOMY	SA %	A %	N %	D %	SD %	TOTAL %
1	The cost of establishing this type of project is very high	49.3	49.3	1.3	00	00	100
2	The project construction cost has not been refunded	41.3	50.7	8	00	00	100
3	There is a stock of materials produced from the project for work sites that have not been used for non-payment of financial dues by the government	38.7	60	1.3	00	00	100
4	There are production lines, mechanisms or equipment that have not been worked on for a period of up to a year or more	45.3	53.3	1.3	00	00	100
5	Some machines, equipment or production lines were sold due to lack of work	38.7	50.7	9.3	1.3	00	100
6	There is no plan to develop the project under the current circumstances	48	46.7	2.7	2.7	00	100
7	The number of workers in the project is less than in previous years since the project was start	53.3	44	2.7	00	00	100
8	Reducing the wages of project workers from previous years	45.3	38.7	9.3	6.7	00	100
9	The production of the project is less than the production of previous years since the project was start	52	45.3	2.7	00	00	100
10	If this work continues at a low level, there is a possibility of closing the project	32	48	18.7	00	1.3	100
11	There are some projects that closed due to lack of business	62.7	32	2.7	00	2.7	100

In the study 49.3% strongly agreed that is the cost of establishing this type of their project is very high, 49.3% agreed, while 1.3% were neutral. 41.3% strongly agreed that is their project construction cost not refunded, 50.7% agreed, while 8% were neutral. 38.7% strongly agreed that is a stock of materials produced from them project for work sites that have not been used for non-payment of financial dues by the government, 60% agreed, while 1.3% were neutral. 45.3% strongly agreed there are a production lines, mechanisms or equipment that have not been worked on for a period of up to a year or more, 53.3% agreed, while 1.3% were neutral. 38.7% strongly agreed there is some machines, equipment or production lines was sold due to lack of work, 50.7% agreed, while 9.3% were neutral and 1.3% disagreed. 48% strongly agreed there is no plan to develop them project under the current circumstances, 46.7% agreed, while 2.7% were neutral and 2.7% disagreed. 53.3% strongly agreed that is the number of workers in them project is less than in previous years since the project was start, 44% agreed, while 2.7% were neutral. 45.3% strongly agreed that the owner reducing the wages of project workers from previous years, 38.7% agreed, while 9.3% were neutral and 6.7% disagreed. 52% strongly agreed that is the production of them project is less than the production of previous years since the project was start, 45.3% agreed, while 2.7% were neutral. 32% strongly agreed that, if this work continues at a low level, there is a possibility of closing their project, 48% agreed, while 18.7% were neutral and 1.3% strongly disagreed. 62.7% strongly agreed there are some projects that closed due to lack of business, 32% agreed, while 2.7% were neutral and 2.7% strongly disagreed. From these questions, most of the respondents agreed that the economy of them project not good, so there are some variables effect there project's economy and this study take a two variables to find if these effect it or not.

4.6. Effect of project management on project's economy

The respondents were required to give their opinion as regards to the extent to which project management affects the PE, and the result show in the table below:

Table 14. Effect of project management on project's economy

SA- Strongly agree   A-Agree   N-Neutral   D-Disagree   SD-Strongly disagree

	PROJECT MANAGEMENT	SA %	A %	N %	D %	SD %	TOTAL %
1	Project officials allow work information to flow to all employees and avoid delays in work	41.3	48	6.7	2.7	1.3	100
2	Project manager are quick to respond to any changes	26.7	62.7	9.3	1.3	00	100
3	The Project Manager monitors the work periodically	34.7	61.3	2.7	00	1.3	100
4	Our project manager and supervisors have good knowledge and experience to finish tasks	29.3	58.7	12	00	00	100
5	My manager has the ability to solve possible problems and errors during work	36	57.3	6.7	00	00	100
6	There is centralization and hierarchy in the project	28	60	10.7	00	1.3	100
7	The resources in the project are used optimally	21.3	62.7	9.3	5.3	1.3	100
8	I have duties in the project and I also have rights	33.3	50.7	14.7	1.3	00	100
9	My manager is good at dealing with me and with my fellow employees	40	53.3	5.3	1.3	00	100
10	My manager are keen to complete the work and achieve the project's goal	36	58.7	4	1.3	00	100
11	My manager will defend me in case of an unintended mistake	28	60	9.3	2.7	00	100
12	My manager guide and teach me	36	56	6.7	1.3	00	100
13	Those who perform their duties well are rewarded and motivated	10.7	41.3	22.7	14.7	10.7	100
14	Employment is done according to experience, skill and specialization	24	64	9.3	1.3	1.3	100
15	In our project we have a box for complaints and suggestions	00	5.3	14.7	42.7	37.3	100
16	The structure of my work unit its well designed	41.3	54.7	4	00	00	100
17	I have enough input in deciding my work-units goals	26.7	57.3	12	4	00	100
18	I have duties in the project and I also have rights	28	62.7	9.3	00	00	100

In the study 41.3% strongly agreed that is the project officials allow work information to flow to all employees and avoid delays in work also 48% agreed while 6.7% were neutral, 2.7% disagreed and 1.3% strongly disagreed. 26.7% strongly agreed that is the project manager are quick to respond to any changes, 62.7% agreed, while 9.3% were neutral and 1.3% disagreed. 34.7% strongly agreed that the project manager monitors the work periodically, also 61.3% agreed, while 2.7% were neutral and 1.3% strongly disagreed. 29.3% strongly agreed that is them project manager and supervisors have good knowledge and experience to finish tasks, 58.7% agreed, while 12% were neutral. 36% strongly agreed that our managers had the ability to solve possible problems

and errors during work, 57.3% agreed, while 6.7% were neutral. 28% strongly agreed that is a centralization and hierarchy in the project, 60% agreed, while 10.7% were neutral and 1.3% strongly disagreed. 21.3% strongly agreed that is the resources in the project are used optimally also 62.7% agreed while 9.3% were neutral, 5.3% disagreed and 1.3% strongly disagreed. 33.3% strongly agreed that is we have duties in the project and I have rights, 50.7% agreed, while 14.7% were neutral and 1.3% disagreed. 40% strongly agreed that our manager is good at dealing with us, 53.3% agreed, while 5.3% were neutral and 1.3% disagreed. 36% strongly agreed that is our manager are keen to complete the work and achieve the project's goal, 58.7% agreed, while 4% were neutral and 1.3% disagreed. 28% strongly agreed that our manager would defend us in case of an unintended mistake, 60% agreed, while 9.3% were neutral and 2.7% disagreed. 36% strongly agreed that is our manager guide and teach us, 56% agreed, while 6.7% were neutral and 1.3% disagreed. 10.7% strongly agreed that is when we perform our duties well are rewarded and motivated also 41.3% agreed while 22.7% were neutral, 14.7% disagreed and 10.7% strongly disagreed. 24% strongly agreed that is the employment done according to experience, skill and specialization, also 64% agreed while 9.3% were neutral, 1.3% disagreed and 1.3% strongly disagreed. 5.3% agreed that is in our project we have a box for complaints and suggestions, 14.7% neutral, while 42.7% were disagree and 37.3% strongly disagreed. 41.3% strongly agreed that the structure of our work unit it is well design, 54.7% agreed, while 4% were neutral. 26.7% strongly agreed that is we have enough input in deciding my work-units goals, 57.3% agreed; while 12% were neutral and 4% disagree. 28% strongly agreed that is we have duties in the project and I have rights, 62.7% agreed, while 9.3% were neutral. From these questions, most of the respondents agreed that the managers can affect the economy of them project, this study take this variable to prove this affect (project management and government support affect project economy).

4.6. Descriptive analysis for ordinal data

To find out whether the questions and variables are statistically significant or not, the data can observed from the following:

4.6.1. Descriptive statistics for project economy

Table 15. Y_1 Axis of the dependent variable - Project economy

Q. No.	SA	A	N	D	SD	Ratio	sample direction	Q. Rank

Q. No.	SA	A	N	D	SD	Ratio	sample direction	Q. Rank
11	47	24	2	0	2	90.40	Strongly agree	1
7	40	33	2	0	0	90.13	Strongly agree	2
9	39	34	2	0	0	89.87	Strongly agree	3
1	37	37	1	0	0	89.60	Strongly agree	4
4	34	40	1	0	0	88.80	Strongly agree	5
6	36	35	2	2	0	88.00	Strongly agree	6
3	29	45	1	0	0	87.47	Strongly agree	7
2	31	38	6	0	0	86.67	Strongly agree	8
5	29	38	7	1	0	85.33	Strongly agree	9
8	34	29	7	5	0	84.53	Strongly agree	10
10	24	36	14	0	1	81.87	Agree	11
Y variable						87.52	Strongly agree	-

Note: The header row above the Q. No. row reads "Y = Axis of the dependent variable (Project economy)".

Question 11 (There are some projects that closed due to lack of business), has been found 90.40% from the respondents strongly agree with this question. Question (7) (The number of workers in the project is less than in previous years since the project was start), has been found 90.13% from the respondents strongly agree with this question. Question (9) (The production of the project is less than the production of previous years since the project was start), has been found 89.87% from the respondents strongly agree with this question. Question (1) (The cost of establishing this type of project is very high), has been found 89.60% from the respondents strongly agree with this question. Question (4) (There are production lines, mechanisms or equipment that has not been worked on for a period of up to a year or more), has been found 88.80% from the respondents strongly agree with this question. Question (6) (There is no plan to develop the project under the current circumstances), has been found 88.00% from the respondents strongly agree with this question. Question (3) (There is a stock of materials

produced from the project for work sites that has not used for non-payment of financial dues by the government), has been found 87.47% from the respondents strongly agree with this question. Question (2) (The project construction cost has not been refunded), has been found 86.67% from the respondents strongly agree with this question. Question (5) (Some machines, equipment or production lines sold due to lack of work), has been found 85.33% from the respondents strongly agree with this question. Question (8) (Reducing the wages of project workers from previous years), has been found 84.53% from the respondents agree with this question. Question 10 (If this work continues at a low level, there is a possibility of closing the project), has been found 81.87% from the respondents strongly agree with this question. The all axis (dependent variable) has found 87.52% from the respondents strongly agree with all questions.

4.6.2. Descriptive statistics for project management:

Table 16. (X_1) Axis of the independent variable - Project management

X1 = Axis of the independent variable (Project management)								
Q. No.	SA	A	N	D	SD	Ratio	sample direction	Q. Rank
16	31	41	3	0	0	87.47	Strongly agree	1
9	30	40	4	1	0	86.40	Strongly agree	2
5	27	43	5	0	0	85.87	Strongly agree	3
10	27	44	3	1	0	85.87	Strongly agree	4
3	26	46	2	0	1	85.60	Strongly agree	5
12	27	42	5	1	0	85.33	Strongly agree	6
1	31	36	5	2	1	85.07	Strongly agree	7
18	21	47	7	0	0	83.73	Agree	8
4	22	44	9	0	0	83.47	Agree	9
8	25	38	11	1	0	83.20	Agree	10
2	20	47	7	1	0	82.93	Agree	11
6	21	45	8	0	1	82.67	Agree	12
11	21	45	7	2	0	82.67	Agree	13
14	18	48	7	1	1	81.60	Agree	14
17	20	43	9	3	0	81.33	Agree	15
7	16	47	7	4	1	79.47	Agree	16
13	8	31	17	11	8	65.33	Strongly agree	17
15	0	4	11	32	28	37.60	Disagree	18
X_1 variable						80.31	Strongly agree	-

Question 16 (The structure of my work unit it is well designed), has been found 87.47% from the respondents strongly agree with this question. Question (9) (My manager is good at dealing with me and with my fellow employees), has been found 86.40% from the respondents strongly agree with this question. Question (5) (My manager has the ability to solve possible problems and errors during work), has been found 85.87% from the respondents strongly agree with this question. Question 10 (My manager are keen to complete the work and achieve the project's goal), has been found 85.87% from the respondents strongly agree with this question. Question (3) (The Project Manager monitors the work periodically), has been found 85.60% from the respondents strongly agree with this question. Question 12 (My manager guide and teach me), has been found 85.33% from the respondents strongly agree with this question. Question (1) (Project officials allow work information to flow to all employees and avoid delays in work), has been found 85.07% from the respondents strongly agree with this question. Question (18) (I have duties in the project and I have rights), has been found 83.73% from the respondents agree with this question. Question (4) (Our project manager and supervisors have good knowledge and experience to finish tasks), has been found 83.47% from the respondents agree with this question. Question (8) (I have duties in the project and I have rights), has been found 83.20% from the respondents agree with this question. Question (2) (Project manager are quick to respond to any changes), has been found 82.93% from the respondents agree with this question. Question (6) (There is centralization and hierarchy in the project), has been found 82.67% from the respondents agree with this question. Question (11) (My manager will defend me in case of an unintended mistake), has been found 82.67% from the respondents agree with this question. Question (14) (Employment is done according to experience, skill and specialization), has been found 81.60% from the respondents agree with this question. Question (17) (I have enough input in deciding my work-unit's goals), has been found 81.33% from the respondents agree with this question. Question (7) (The resources in the project used optimally), has been found 79.47% from the respondents agree with this question. Question 13 (Those who perform their duties well rewarded and motivated), has been found 65.33% from the respondents strongly agree with this question. Question (15) (In our project we have a box for complaints and suggestions), has been found 37.60% from the respondents disagree with this question. The all axis (X_1) (independent variable) has been found 80.31% from the respondents strongly agree with all questions.

4.6.3. Descriptive statistics for government support:

Table 17. X_2 Axis of the independent variable - government support

SA- Strongly agree   A-Agree   N-Neutral   D-Disagree   SD-Strongly disagree

Q. No.	SA	A	N	D	SD	Ratio	sample direction	Q. Rank
X2 = Axis of the independent variable (government support)									
1	43	31	1	0	0	91.20	Strongly agree	1
5	37	37	1	0	0	89.60	Strongly agree	2
6	39	32	4	0	0	89.33	Strongly agree	3
8	42	27	4	2	0	89.07	Strongly agree	4
2	37	34	4	0	0	88.80	Strongly agree	5
4	38	31	5	1	0	88.27	Strongly agree	6
3	36	32	6	0	1	87.20	Strongly agree	7
10	36	28	10	1	0	86.40	Strongly agree	8
9	24	41	9	1	0	83.47	Agree	9
7	26	36	10	1	2	82.13	Agree	10
X_2 variable						87.55	Strongly agree	-

Question (1) (There is no government support on the land on which the project is being built), has been found 91.20% from the respondents strongly agree with this question. Question (5) (There is no government support for the implementation of the project's services such as (water and electricity)), has been found 89.60% from the respondents strongly agree with this question. Question (6) (There is no government protection for foreign exchange fluctuations), has been found 89.33% from the respondents strongly agree with this question. Question (8) (The government does not support strategic projects after force majeure conditions such as wars have ended), has been found 89.07% from the respondents strongly agree with this question. Question (2) (There is no government support for raw materials), has been found 88.80% from the respondents strongly agree with this question. Question (4) (There is no government support for project bills), has been found 88.27% from the respondents strongly agree with this question. Question (3) (There are no taxes levied on the project), has been found 87.20% from the respondents strongly agree with this question. Question 10 (There is no government support for the interests of loans granted to this type of project), has been found 86.40% from the respondents strongly agree with this question. Question (9) (The government does not provide loans for this type of project), has been found 83.47% from the respondents agree with this question. Question (7) (The government does not place controls on setting up projects using prefabricated materials), has been found 82.13% from the respondents agree with this question.

The all axis (X_2) (independent variable) has been found 87.55% from the respondents strongly agree with all questions.

4.7. Method of successive intervals

The MSI is a procedure for obtaining equal intervals from category data, and make a transformation from Ordinal scale to distance scale. This method involves calculating the percentage of each choice on the scale in question, then determining the right value in relation to the normal dispersion. It is also having normal dispersion by transforming the data, in addition to the translation from ordinal scale to distance scale. The parametric statistic test can used for this. On each option of each question item, the MSI used to convert the ordinal scale to a distance scale (Waryanto, Budi, Millafati, & Astika, 2006). Stages in doing transformation with MSI are (Asdar & Badrullah, 2016):

1- Determine the frequency on each option of each question items.
2- Determine the proportion of each option by dividing the frequency of choice by the number of sample.
3- Calculate the cumulative proportion hat is by summing the proportion sequentially for each option.
4- Determining the value of Z for each cumulative proportion that is considered follow the standard normal distribution.
5- Determining the density values for each value of Z.
6- Counting scale value for each option.
7- Changing the smallest scale value to be equal with (1) and transforming each scale according to the smallest scale changes in order to obtain transformed scale value.

From what mentioned above, will use MSI for the questionnaire for this study, to show us the following results:

1- Successive Detail: In the questionnaire, we have 39 questions for all three variables, so we will mention the first five questions of each variable; all details can see in APPENDIXES-B.

Table 18. Successive detail for project economy

Col	Category	Freq.	Prop	Cum	Density	Z	Scale
1	3	1	0.013	0.013	0.034	-2.216	3.000
	4	37	0.493	0.507	0.399	0.017	4.827
	5	37	0.493	1.000	0.000		6.375
2	3	6	0.080	0.080	0.149	-1.405	3.000
	4	38	0.507	0.587	0.389	0.219	4.383
	5	31	0.413	1.000	0.000		5.801
3	3	1	0.013	0.013	0.034	-2.216	3.000
	4	45	0.600	0.613	0.383	0.288	4.985
	5	29	0.387	1.000	0.000		6.556
4	3	1	0.013	0.013	0.034	-2.216	3.000
	4	40	0.533	0.547	0.396	0.117	4.887
	5	34	0.453	1.000	0.000		6.440
5	2	1	0.013	0.013	0.034	-2.216	2.000
	3	7	0.093	0.107	0.184	-1.244	2.962
	4	38	0.507	0.613	0.383	0.288	4.174
	5	29	0.387	1.000	0.000		5.556

Table 19. Successive detail for project management

Col	Category	Freq.	Prop	Cum	Density	Z	Scale
1	1	1	0.013	0.013	0.034	-2.216	1.000
	2	2	0.027	0.040	0.086	-1.751	1.618
	3	5	0.067	0.107	0.184	-1.244	2.100
	4	36	0.480	0.587	0.389	0.219	3.138
	5	31	0.413	1.000	0.000		4.508
2	2	1	0.013	0.013	0.034	-2.216	2.000
	3	7	0.093	0.107	0.184	-1.244	2.962
	4	47	0.627	0.733	0.329	0.623	4.335
	5	20	0.267	1.000	0.000		5.798
3	1	1	0.013	0.013	0.034	-2.216	1.000
	3	2	0.027	0.040	0.086	-1.751	1.618
	4	46	0.613	0.653	0.369	0.394	3.105
	5	26	0.347	1.000	0.000		4.631
4	3	9	0.120	0.120	0.200	-1.175	3.000
	4	44	0.587	0.707	0.344	0.544	4.421
	5	22	0.293	1.000	0.000		5.840
5	3	5	0.067	0.067	0.129	-1.501	3.000
	4	43	0.573	0.640	0.374	0.358	4.513
	5	27	0.360	1.000	0.000		5.979

Table 20. Successive detail for government support

Col	Category	Freq.	Prop	Cum	Density	Z	Scale
1	3	1	0.013	0.013	0.034	-2.216	3.000
	4	31	0.413	0.427	0.392	-0.185	4.700
	5	43	0.573	1.000	0.000		6.250
31	3	4	0.053	0.053	0.109	-1.613	3.000
	4	34	0.453	0.507	0.399	0.017	4.395
	5	37	0.493	1.000	0.000		5.844
32	1	1	0.013	0.013	0.034	-2.216	1.000
	3	6	0.080	0.093	0.167	-1.321	1.909
	4	32	0.427	0.520	0.398	0.050	3.023
	5	36	0.480	1.000	0.000		4.396
33	2	1	0.013	0.013	0.034	-2.216	2.000
	3	5	0.067	0.080	0.149	-1.405	2.849
	4	31	0.413	0.493	0.399	-0.017	3.961
	5	38	0.507	1.000	0.000		5.353
34	3	1	0.013	0.013	0.034	-2.216	3.000
	4	37	0.493	0.507	0.399	0.017	4.827
	5	37	0.493	1.000	0.000		6.375

2- Successive Interval: In the questionnaire we have 39 questions for all three variables, so we will mention the first five (respondents and questions) of each variable, all details can be seen in APPENDIXES-B.

Table 21. Successive interval for project economy

PE. Q1	PE. Q2	PE. Q3	PE. Q4	PE. Q5
6.375	5.801	4.985	6.440	5.556
6.375	5.801	4.985	6.440	5.556
6.375	5.801	4.985	6.440	4.174
3.000	5.801	6.556	4.887	4.174
4.827	4.383	4.985	4.887	4.174

Table 22. Successive interval for project management

PE. Q1	PE. Q2	PE. Q3	PE. Q4	PE. Q5
4.508	4.335	3.105	4.421	4.513
4.508	5.798	4.631	5.840	5.979
3.138	4.335	1.000	4.421	4.513
2.100	5.798	3.105	5.840	5.979
3.138	4.335	3.105	5.840	5.979

Table 23. Successive interval for government support

PE. Q1	PE. Q2	PE. Q3	PE. Q4	PE. Q5
6.250	5.844	4.396	5.353	6.375
6.250	5.844	4.396	5.353	6.375
6.250	5.844	4.396	5.353	6.375
6.250	5.844	4.396	2.000	6.375
6.250	5.844	4.396	5.353	6.375

4.8. Questionnaire data analysis

After transforming the questionnaire data to successive interval, now will analyze the data in the following ways:

4.8.1. Descriptive statistics analysis for interval data

A- Descriptive statistics analysis for project economy:

The descriptive statistics (table 24) in the study, including mean (M), standard deviation (S.D); Skewness and Kurtosis of the variable (project economy) were also measure.

Table 24. Descriptive statistics analysis for project economy

	Mean	S.D	Skewness	Kurtosis
P.E Q1	5.566178	0.830106	-0.29819	-0.95809
P.E Q2	4.858328	0.876357	-0.34339	-0.69218
P.E Q3	5.566178	0.823485	0.059813	-0.69314
P.E Q4	5.566178	0.830044	-0.16285	-0.91216
P.E Q5	4.566178	0.89184	-0.39058	-0.38199
P.E Q6	4.313313	0.863628	-0.50482	-0.52604
P.E Q7	5.313313	0.839527	-0.5366	-0.74101
P.E Q8	3.939601	0.898649	-0.5421	-0.72349
P.E Q9	5.313313	0.841183	-0.49336	-0.7526
P.E Q10	3.566178	0.913597	-0.2822	-0.54069
P.E Q11	3.313313	0.831325	-0.95903	-0.21616

From the table above should have a sequence for the questions, to do this sequence should compare between means and it has come from the biggest to the lowest (Q1>Q3>Q4>Q7>Q9>Q2>Q5>Q6>Q8>Q10>Q11). Q3 and Q4 had the same means, for that the Q3>Q4 because Q3 had less SD than Q4. The range of the skewness is (-1 to +1) and the range of kurtosis is (-2 to +2), for that all questions values are lying within the range of skewness and kurtosis which conforms the normality of the data for regression.

B- Descriptive statistics analysis for project management:

The descriptive statistics (table 25) in the study, including mean (M), standard deviation (S.D); Skewness and Kurtosis of the variable (project management) also measured.

Table 25. Descriptive statistics analysis for project management

	Mean	S.D	Skewness	Kurtosis
P.M Q1	3.566178	0.893339	-0.474	-0.34251
P.M Q2	4.566178	0.881221	-0.18148	0.177942
P.M Q3	3.566178	0.849803	-0.1092	-0.09955
P.M Q4	4.667004	0.884889	-0.13666	-0.46442
P.M Q5	4.939601	0.868436	-0.202	-0.45407
P.M Q6	3.566178	0.889912	-0.21664	0.007534
P.M Q7	3.566178	0.898647	-0.22563	0.350023
P.M Q8	4.566178	0.906661	-0.31359	-0.42937
P.M Q9	4.566178	0.874396	-0.35341	-0.31637
P.M Q10	4.566178	0.863089	-0.2147	-0.15411
P.M Q11	4.313313	0.891161	-0.22756	0.012792
P.M Q12	4.566178	0.879866	-0.29831	-0.20615
P.M Q13	2.724225	0.954534	-0.08234	-0.44119
P.M Q14	3.566178	0.884188	-0.19236	0.372845
P.M Q15	2.014269	0.916176	0.40576	-0.65199
P.M Q16	5.154344	0.854816	-0.24585	-0.57434
P.M Q17	4.154344	0.905492	-0.24179	-0.1344
P.M Q18	4.78742	0.871213	-0.09277	-0.18557

From the table above should have a sequence for the questions, to do this sequence should compare between means and it has come from the biggest to the lowest (Q16>Q5>Q18>Q4>Q2>Q8>Q9>Q10>Q12>Q11>Q17>Q1>Q3>Q6>Q7>Q14>Q13>Q15). Q8, Q9, Q10, Q12 had the same means, also Q3, Q6, Q7, Q14 had the same means, for that who had less SD will be the bigger one. The range of the skewness is (-1 to +1) and the range of kurtosis is (-2 to +2), for that all questions values are lying within the range of skewness and kurtosis which conforms the normality of the data for regression.

C- Descriptive statistics analysis for project management:

The descriptive statistics (table 26) in the study, including mean (M), standard deviation (S.D); Skewness and Kurtosis of the variable (government support) also measured.

Table 26. Descriptive statistics analysis for government support

	Mean	S.D	Skewness	Kurtosis
G.S Q1	5.566178	0.82164	-0.58252	-0.86758
G.S Q2	5.035604	0.859826	-0.50478	-0.70668
G.S Q3	3.566178	0.880011	-0.58582	-0.47333
G.S Q4	4.566178	0.87174	-0.6399	-0.4468
G.S Q5	5.566178	0.830106	-0.29819	-0.95809
G.S Q6	5.035604	0.856159	-0.58028	-0.69966
G.S Q7	3.313313	0.913886	-0.37799	-0.42328
G.S Q8	4.313313	0.860224	-0.7857	-0.40188
G.S Q9	4.566178	0.899149	-0.28726	-0.26394
G.S Q10	4.566178	0.889908	-0.59889	-0.60627

From the table above should have a sequence for the questions, to do this sequence should compare between means and it has come from the biggest to the lowest (Q1>Q5>Q2>Q6>Q4>Q9>Q10>Q8>Q3>Q7). Q1, Q5 had the same means, and Q2, Q6 had the same means, and Q4, Q9, Q10 the same means, for that who had less SD will be the bigger one. The range of the skewness is (-1 to +1) and the range of kurtosis is (-2 to +2), for that all questions values are lying within the range of skewness and kurtosis which conforms the normality of the data for regression.

4.8.2. Multiple linear regression analysis

Multiple linear regression analysis used to find out to what extent the dependent variable (project economy) affected by the independent variables (project management, government support), and what measures should be take based on the results in the tables below:

Table 27. Regression-Model summary

		Model Summary [b]		
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.367[a]	0.135	0.111	0.33082

Table 28. Regression-ANOVA

			ANOVA [a]			
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.229	2	0.615	5.617	0.005[b]
	Residual	7.880	72	0.109		
	Total	9.109	74			

Table 29. Regression-Coefficients

		Coefficients [a]				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.877	0.554		5.190	0.000
	Total PM	0.257	0.101	0.281	2.554	0.013
	Total GS	0.171	0.089	0.212	1.928	0.058

From The results found out whether project management and government support could significantly on project's economy. The results of the regression indicated that the model explained 13.5% of the variance and that the model was a significant predictor of project economy, $F_{(2, 72)} = 5.617$, $p = 0.005$. While project management contributed significantly to the model ($B = 0.257$, $p<0.05$), government support did not ($B = 0.171$, $p=0.058$). The final predictive model was:

Project economy = 2.877 + (0.257 * Project management) + (0.089 * Government support)

$R^2 = 0.135 = 13.5\%$, this is a low value, the project management have a high relationship between it and the project (in field of economic, success and performance), this study got a low value for R^2, this low value can be explained by several reasons, which are as follows:

1- There are many independent variables (internal and external variables) that not include in the model, which influence the project economy.
2- The economic deterioration started in 2014, due to the drop in oil prices, the outbreak of a war against terrorism, and the allocation of most of the state budget to war only.
3- Coronavirus disease (COVID-19) that infected the whole world and led to an economic recession.

That these reasons affect the economy of this type of projects, which in turn led to the suspension of projects and factories or their low operation. These are obligatory reasons and cannot avoided, and these failures cannot considered failures of project management. Therefore, when analyzing the data, we find that the strength of the correlation between project economy and project management is low, but it cannot considered a real degree due to the previously mentioned circumstances.

Moksony, Ferenc , Heged, & Rita (1990), State "The coefficient of determination is, in essence, a mixture of three factors: the impact of the explanatory variable, the degree of variation in this variable, and, finally, the size of the spread around the regression line. Precisely because it is affected by so many factors, R2 is unable to reflect any of them accurately".

4.8.3. Independent samples t-test

In this study was used this analysis to compare between the three factories (Which project is more or less affected by its economy than the rest of the projects). After use this method, the results came in table below (F1 = Al-Kut precast factory, F2 = Babylon Company for precast building, F3 = Al-Burhan factory):

A- Comparing between F1 and F2:

Table 30. Independent samples t-test between F1 and F2

	F1	F2
Mean	4.61	4.78
Standard Deviation	0.34	0.18
Variance	0.12	0.03
Observations	25	25
Hypothesized Mean Difference	0	
Df	48	
t Stat	-2.08	
P(T<=t) two-tail	0.04	
t Critical two-tail	2.01	

The project's economy of F1 (M = 4.61, SD = 0.34, n = 25) was hypothesized to be less effected than the project's economy of F2 (M = 4.78, SD = 0.18, n = 25). This different was significant, t (48) = 2.01, p = 0.04 (two-tail). This indicates that F1 less effected on it independent variable (project economy) by the independent variables (project management and government support) than the effected on F2.

B- Comparing between F1 and F3:

Table 31. Independent samples t-test between F1 and F3

	F1	F3
Mean	4.61	4.76
Standard Deviation	0.34	0.46
Variance	0.12	0.21
Observations	25	25
Pooled Variance	0.16	
Hypothesized Mean Difference	0	
df	48	
t Stat	-1.27	
P(T<=t) two-tail	0.21	
t Critical two-tail	2.01	

The project's economy of F1 (M = 4.61, SD = 0.34, n = 25) was hypothesized to be less effected than the project's economy of F3 (M = 4.76, SD = 0.46, n = 25). This different was not significant, t (48) = 2.01, p = 0.21 (two-tail). This indicates there are no difference between F1 and F3.

C- Comparing between F2 and F3:

Table 32. Independent samples t-test between F2 and F3

	F2	F3
Mean	4.77	4.75
Standard Deviation	0.04	0.09
Variance	0.03	0.21
Observations	25	25
Hypothesized Mean Difference	0	
df	48	
t Stat	0.16	
P(T<=t) two-tail	0.87	
t Critical two-tail	2.01	

The project's economy of F2 (M = 4.77, SD = 0.04, n = 25) was hypothesized to be more effected than the project's economy of F3 (M = 4.75, SD = 0.09, n = 25). This different was not significant, t (48) = 2.01, p = 0.87 (two-tail). This indicates there are no difference between F2 and F3.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1. CONCLUSION

The aim of this research is to know the impact of project management and government support on the project economy, in addition to comparing the projects of the study sample in terms of the amount of influence between them. To reach this goal, a sample of 90 respondents from the PCF employees used, and the size of this sample was 75 respondents.

The data taken through an interview with project managers and the creation of a questionnaire (Likert method) that contains three sections, including a section concerned with knowing the extent of the impact on the project's economy, the second section concerned with project management, and the third section concerned with knowing the extent of government support for the project. The results of the project managers' respondents showed that the extinction of their projects due to the lack of government support for these projects, and because of this they have projects destruction, lack of profits, reduced number of employees and the expectation of them to close, completely stop, or sell. As for the results shown by the questionnaire, after analyzing it by the method of interpretation analysis for descriptive analysis of the questionnaire form. It found that 87.52% of the respondents strongly agreed that there is an impact, decline and weakness in their project economy. (80.31%) of respondents strongly agreed that the project management of the project has an impact on the project's economy. 87.55% of the respondents strongly agreed that there is no government support, which in turn negatively affected their project economy, that all of these answers were significant and indicated in the tables (15, 16 and 17).

In addition, the data of the questionnaire form transferred from ordinal to the interval data; it analyzed statistically, extracting the means of the questions, their standard deviation, and their range as in the tables (24, 25 and 26). Showing the priority questions through comparison with the averages (and the standard deviation in if the means are equal), all the questions were within the range (+1, -1). Then the data analyzed by the multiple linear regression method, and it found that the value of the effect of these variables is 13.5% as in Table (27). The percentage of this effect is because there are many variables that also affect the economy of the project, which

were not included in the study. As well as the outbreak of the Corona virus, which led to the suspension of business all over the world, and finally the conditions of war that passed through the country of the study.

The independent samples t-test analysis used to find out the difference between the projects as in the tables (30, 31 and 32). The results came that there is a difference between the first and the second project, in that the first project less affected by its economy than the second project, the result was significant and there are no differences between the first and third project. The second and third project, as the results were not significant. The study further tested hypothesis and the results where that:

H1: There is a significant impact from the project management on the project's economy. It accept the alternative hypothesis and reject the null hypothesis.

H2: There is a significant impact from the government support on the project's economy. It was null hypothesis and was reject the alternative hypothesis because there was no significant impact from the government support on the project's economy. It should note that 87.55% of the respondents strongly agreed there is an impact from government support on their project's economy.

H3: There is a significant different between project (1) (Al-Kut precast) and project (2) (Babylon company for precast building). It accepting the alternative hypothesis and rejecting the null hypothesis.

H4: There is a significant different between project (1) (Al-Kut precast) and project (3) (Al-Burhan factory). It is null hypothesis and is reject the alternative hypothesis because there was no significant different between project (1) (Al-Kut precast) and project (3) (Al-Burhan factory).

H5: There is a significant different between project (2) ((Babylon company for precast building) and project (3) (Al-Burhan factory). It was null hypothesis and was reject the alternative hypothesis because there was no significant different between project (2) (Babylon company for precast building) and project (3) (Al-Burhan factory).

5.2. RECOMMENDATION

5.2.1. Practical recommendations

Investors and project owners should pay attention to the establishment of this type of project, as it is one of the high-cost projects. A good economic study should conducted, taking into account the negatives and positives in the place where the project is being undertaken and selecting project managers with sufficient competencies and experience in Project management.

Given the importance of building by the precast method and that the cost of this type of factory is very high, which may reach $90 million, as it is considered one of the modern methods of construction due to its speed of completion and lack of waste, and also requires the operation of many hands working. For example, the government's failure to subsidize raw materials leads to an increase in the cost of production and thus the inability to compete with construction in the traditional way. There are many precast projects that have been closed and the rest of them are weak or on the verge of closing. In addition, the study country needs a lot of construction at all levels in terms of building residential complexes, government buildings, hospitals, schools, universities, and others. Therefore, the government must pay attention for this type of project and support and invest it for its own good, and not leave it to extinction, closure or bankruptcy. Where the government can support this type of project by subsidizing raw materials, reducing interest on loans, providing project land, or subsidizing bills for project services.

5.2.2. Recommendations for future studies

The following potential areas of studies, if studied and explored, will give increased validity to the results of this research and provide scientific knowledge in this field:

1- The model should augmented to take into consideration the other different types of construction projects. There two types of variables:
    A- External variables: A variable that are outside the control of the project manager and cannot be controlled and the project manager must adapt to these variables, such as legislation, regulations, critical conditions (wars) and policies in the area in which

the project is located, In addition to global conditions such as economic inflation and epidemics.

B- Internal variables: A variable that the stakeholder or project manager can control and can be changed according to the needs of the project, such as time management, project scheduling and planning, senior management support, team selection, etc.

2- Comparison between the traditional construction and the precast construction in terms of completion speed, cost, etc.

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APPENDIXES

APPENDIXES A: Questionnaire

1- In English language:

Questionnaire form for academic research about precast concrete factories

………Kind regards..........

The researcher is preparing a study as a requirement to obtain a master's degree in business administration at Gelisim University / Istanbul.

SA= Strongly agree, A= Agree, N= Neutral, D= Disagree, SD= Strongly disagree

	PROJECT'S ECONOMY	SA	A	N	D	SD
1	The cost of establishing this type of project is very high					
2	The project construction cost has not been refunded					
3	There is a stock of materials produced from the project for work sites that have not been used for non-payment of financial dues by the government					
4	There are production lines, mechanisms or equipment that have not been worked on for a period of up to a year or more					
5	Some machines, equipment or production lines were sold due to lack of work					
6	There is no plan to develop the project under the current circumstances					
7	The number of workers in the project is less than in previous years since the project was start					
8	Reducing the wages of project workers from previous years					
9	The production of the project is less than the production of previous years since the project was start					
10	If this work continues at a low level, there is a possibility of closing the project					
11	There are some projects that closed due to lack of business					

PROJECT MANAGEMENT	SA	A	N	D	SD
1 Project officials allow work information to flow to all employees and avoid delays in work					
2 Project manager are quick to respond to any changes					
3 The Project Manager monitors the work periodically					
4 Our project manager and supervisors have good knowledge and experience to finish tasks					
5 My manager has the ability to solve possible problems and errors during work					
6 There is centralization and hierarchy in the project					
7 The resources in the project are used optimally					
8 I have duties in the project and I also have rights					
9 My manager is good at dealing with me and with my fellow employees					
10 My manager are keen to complete the work and achieve the project's goal					
11 My manager will defend me in case of an unintended mistake					
12 My manager guide and teach me					
13 Those who perform their duties well are rewarded and motivated					
14 Employment is done according to experience, skill and specialization					
15 In our project we have a box for complaints and suggestions					
16 The structure of my work unit its well designed					
17 I have enough input in deciding my work-units goals					
18 I have duties in the project and I also have rights					
GOVERNMENT SUPPORT	SA	A	N	D	SD
1 There is no government support on the land on which the project is being built					

2	There is no government support for raw materials					
3	There are no taxes levied on the project					
4	There is no government support for project bills					
5	There is no government support for the implementation of the project's services such as (water and electricity)					
6	There is no government protection for foreign exchange fluctuations					
7	The government does not place controls on setting up projects using prefabricated materials					
8	The government does not support strategic projects after force majeure conditions such as wars have ended					
9	The government does not provide loans for this type of project					
10	There is no government support for the interests of loans granted to this type of project					

2- In Arabic language:

استمارة استبيان للبحث الأكاديمي عن مصانع الخرسانة مسبقة الصنع

...أطيب التحيات...

يقوم الباحث بإعداد الدراسة كشرط للحصول على درجة الماجستير في إدارة المشاريع من جامعة كيليشم / اسطنبول.

لا أوافق بشدة	لا أوافق	محايد	أوافق	أوافق بشدة	استثمار المشروع	
					تكلفة إنشاء هذا النوع من المشاريع عالية جدًا	1
					لم يتم ارجاع كلفة انشاء المشروع	2
					يوجد مخزون من المواد المنتجة من المشروع لمواقع العمل التي لم يتم استخدامها لعدم سداد المستحقات المالية من قبل الحكومة	3
					هنالك خطوط انتاج أو اليات أو معدات لم يتم العمل بها لفترة قد تصل الى السنة أو أكثر	4
					تم بيع بعض الاليات أو المكائن أو المعدات أو خطوط الإنتاج وذلك لقلة الأعمال	5
					لا توجد خطة لتطوير المشروع في ظل الظروف الحالية	6
					عدد العاملين في المشروع اقل من السنوات السابقة عند بدء عمل المشروع	7
					تقليل أجور العاملين في المشروع عن السنوات السابقة	8
					انتاج المشروع أقل من انتاج السنوات السابقة عند بدء عمل المشروع	9
					في حال استمرار هذا العمل بمستوى منخفض فهنالك احتمال باغلاق المشروع	10
					هنالك بعض المشاريع أغلقت بسبب قلة الاعمال	11

لا أوافق بشدة	لا أوافق	محايد	أوافق	أوافق بشدة	إدارة المشروع	
					يسمح مسؤولين المشروع بتدفق معلومات العمل إلى جميع الموظفين وتجنب التأخير في العمل	1
					مدير المشروع سريع في الاستجابة لأية تغييرات	2
					يراقب مدير المشروع العمل بشكل دوري	3
					يتمتع مدير المشروع والمشرفون لدينا بمعرفة وخبرة جيدة لإنهاء المهام	4
					مديري لديه القدرة على حل المشاكل والأخطاء المحتملة أثناء العمل	5
					هناك مركزية وتسلسل هرمي في المشروع	6
					يتم استخدام الموارد في المشروع على النحو الأمثل	7
					لدي واجبات في المشروع ولدي حقوق أيضًا	8
					مديري جيد في التعامل معي ومع زملائي الموظفين	9
					مديري حريص على استكمال العمل وتحقيق هدف المشروع	10
					سيدافع مديري عني في حالة حدوث خطأ غير مقصود	11
					مديري يوجهني ويعلمني	12
					أولئك الذين يؤدون واجباتهم بشكل جيد يتم مكافأتهم وتحفيزهم	13
					يتم التوظيف حسب الخبرة والمهارة والتخصص	14
					في مشروعنا لدينا صندوق للشكاوى والاقتراحات	15
					يمكنني دائمًا التحدث مع مديري إذا كانت لدي مشكلة متعلقة بالعمل	16
					هيكل وحدة العمل مصمم بشكل جيد	17
					لدي ما يكفي من المدخلات في تحديد أهداف وحدات العمل الخاصة بي	18
لا أوافق بشدة	لا أوافق	محايد	أوافق	أوافق بشدة	الدعم الحكومي	
					لا يوجد دعم حكومي على الأرض التي يقام عليها المشروع	1
					لا يوجد دعم حكومي على المواد الخام	2
					لا يوجد دعم على الضرائب المفروضة على المشروع	3

					لا يوجد دعم حكومي لفواتير المشروع	4
					لا يوجد دعم حكومي على تنفيذ الخدمات الخاصة بالمشروع مثل (الماء و الكهرباء)	5
					لا توجد حماية من قبل الحكومة لتقلبات النقد الأجنبي	6
					لا تضع الحكومة ضوابط على إقامة المشاريع الخاصة بها باستخدام مواد مسبقة الصنع	7
					لا تدعم الحكومة هذا النوع من المشاريع بعد انتهاء الظروف القاهرة مثل الحروب	8
					تقدم الحكومة قروضا لهذا النوع من المشاريع	9
					لا يوجد دعم حكومي على فوائد القروض الممنوحة لهذا النوع من المشاريع	10

APPENDIXES B: Successive detail

Successive Detail for Project Economy							
Col	Category	Freq.	Prop	Cum	Density	Z	Scale
1	3	1	0.013	0.013	0.034	-2.216	3.000
	4	37	0.493	0.507	0.399	0.017	4.827
	5	37	0.493	1.000	0.000		6.375
2	3	6	0.080	0.080	0.149	-1.405	3.000
	4	38	0.507	0.587	0.389	0.219	4.383
	5	31	0.413	1.000	0.000		5.801
3	3	1	0.013	0.013	0.034	-2.216	3.000
	4	45	0.600	0.613	0.383	0.288	4.985
	5	29	0.387	1.000	0.000		6.556
4	3	1	0.013	0.013	0.034	-2.216	3.000
	4	40	0.533	0.547	0.396	0.117	4.887
	5	34	0.453	1.000	0.000		6.440
5	2	1	0.013	0.013	0.034	-2.216	2.000
	3	7	0.093	0.107	0.184	-1.244	2.962
	4	38	0.507	0.613	0.383	0.288	4.174
	5	29	0.387	1.000	0.000		5.556
6	2	2	0.027	0.027	0.062	-1.932	2.000
	3	2	0.027	0.053	0.109	-1.613	2.555
	4	35	0.467	0.520	0.398	0.050	3.692
	5	36	0.480	1.000	0.000		5.143
7	3	2	0.027	0.027	0.062	-1.932	3.000
	4	33	0.440	0.467	0.398	-0.084	4.550
	5	40	0.533	1.000	0.000		6.059
8	2	5	0.067	0.067	0.129	-1.501	2.000
	3	7	0.093	0.160	0.243	-0.994	2.718
	4	29	0.387	0.547	0.396	0.117	3.544
	5	34	0.453	1.000	0.000		4.814
9	3	2	0.027	0.027	0.062	-1.932	3.000
	4	34	0.453	0.480	0.398	-0.050	4.570
	5	39	0.520	1.000	0.000		6.080
10	1	1	0.013	0.013	0.034	-2.216	1.000
	3	14	0.187	0.200	0.280	-0.842	2.250
	4	36	0.480	0.680	0.358	0.468	3.404
	5	24	0.320	1.000	0.000		4.684
11	1	2	0.027	0.027	0.062	-1.932	1.000
	3	2	0.027	0.053	0.109	-1.613	1.555
	4	24	0.320	0.373	0.379	-0.323	2.469
	5	47	0.627	1.000	0.000		3.918

Col	Category	Freq.	Prop	Cum	Density	Z	Scale
Successive Detail for Project Management							
1	1	1	0.013	0.013	0.034	-2.216	1.000
	2	2	0.027	0.040	0.086	-1.751	1.618
	3	5	0.067	0.107	0.184	-1.244	2.100
	4	36	0.480	0.587	0.389	0.219	3.138
	5	31	0.413	1.000	0.000		4.508
2	2	1	0.013	0.013	0.034	-2.216	2.000
	3	7	0.093	0.107	0.184	-1.244	2.962
	4	47	0.627	0.733	0.329	0.623	4.335
	5	20	0.267	1.000	0.000		5.798
3	1	1	0.013	0.013	0.034	-2.216	1.000
	3	2	0.027	0.040	0.086	-1.751	1.618
	4	46	0.613	0.653	0.369	0.394	3.105
	5	26	0.347	1.000	0.000		4.631
4	3	9	0.120	0.120	0.200	-1.175	3.000
	4	44	0.587	0.707	0.344	0.544	4.421
	5	22	0.293	1.000	0.000		5.840
5	3	5	0.067	0.067	0.129	-1.501	3.000
	4	43	0.573	0.640	0.374	0.358	4.513
	5	27	0.360	1.000	0.000		5.979
6	1	1	0.013	0.013	0.034	-2.216	1.000
	3	8	0.107	0.120	0.200	-1.175	2.012
	4	45	0.600	0.720	0.337	0.583	3.339
	5	21	0.280	1.000	0.000		4.768
7	1	1	0.013	0.013	0.034	-2.216	1.000
	2	4	0.053	0.067	0.129	-1.501	1.783
	3	7	0.093	0.160	0.243	-0.994	2.345
	4	47	0.627	0.787	0.291	0.795	3.490
	5	16	0.213	1.000	0.000		4.930
8	2	1	0.013	0.013	0.034	-2.216	2.000
	3	11	0.147	0.160	0.243	-0.994	3.141
	4	38	0.507	0.667	0.364	0.431	4.329
	5	25	0.333	1.000	0.000		5.657
9	2	1	0.013	0.013	0.034	-2.216	2.000
	3	4	0.053	0.067	0.129	-1.501	2.783
	4	40	0.533	0.600	0.386	0.253	4.084
	5	30	0.400	1.000	0.000		5.532
10	2	1	0.013	0.013	0.034	-2.216	2.000
	3	3	0.040	0.053	0.109	-1.613	2.707
	4	44	0.587	0.640	0.374	0.358	4.114
	5	27	0.360	1.000	0.000		5.605
11	2	2	0.027	0.027	0.062	-1.932	2.000

Col	Category	Freq.	Prop	Cum	Density	Z	Scale
	3	7	0.093	0.120	0.200	-1.175	2.831
	4	45	0.600	0.720	0.337	0.583	4.086
	5	21	0.280	1.000	0.000		5.516
12	2	1	0.013	0.013	0.034	-2.216	2.000
	3	5	0.067	0.080	0.149	-1.405	2.849
	4	42	0.560	0.640	0.374	0.358	4.164
	5	27	0.360	1.000	0.000		5.605
13	1	8	0.107	0.107	0.184	-1.244	1.000
	2	11	0.147	0.253	0.320	-0.664	1.796
	3	17	0.227	0.480	0.398	-0.050	2.378
	4	31	0.413	0.893	0.184	1.244	3.243
	5	8	0.107	1.000	0.000		4.448
14	1	1	0.013	0.013	0.034	-2.216	1.000
	2	1	0.013	0.027	0.062	-1.932	1.506
	3	7	0.093	0.120	0.200	-1.175	2.084
	4	48	0.640	0.760	0.311	0.706	3.393
	5	18	0.240	1.000	0.000		4.861
15	1	28	0.373	0.373	0.379	-0.323	1.000
	2	32	0.427	0.800	0.280	0.842	2.246
	3	11	0.147	0.947	0.109	1.613	3.183
	4	4	0.053	1.000	0.000		4.050
16	3	3	0.040	0.040	0.086	-1.751	3.000
	4	41	0.547	0.587	0.389	0.219	4.599
	5	31	0.413	1.000	0.000		6.097
17	2	3	0.040	0.040	0.086	-1.751	2.000
	3	9	0.120	0.160	0.243	-0.994	2.845
	4	43	0.573	0.733	0.329	0.623	4.006
	5	20	0.267	1.000	0.000		5.387
18	3	7	0.093	0.093	0.167	-1.321	3.000
	4	47	0.627	0.720	0.337	0.583	4.516
	5	21	0.280	1.000	0.000		5.990

Successive Detail for Government Support							
Col	Category	Freq.	Prop	Cum	Density	Z	Scale
1	3	1	0.013	0.013	0.034	-2.216	3.000
	4	31	0.413	0.427	0.392	-0.185	4.700
	5	43	0.573	1.000	0.000		6.250
2	3	4	0.053	0.053	0.109	-1.613	3.000
	4	34	0.453	0.507	0.399	0.017	4.395
	5	37	0.493	1.000	0.000		5.844
3	1	1	0.013	0.013	0.034	-2.216	1.000
	3	6	0.080	0.093	0.167	-1.321	1.909

		4	32	0.427	0.520	0.398	0.050	3.023
		5	36	0.480	1.000	0.000		4.396
4		2	1	0.013	0.013	0.034	-2.216	2.000
		3	5	0.067	0.080	0.149	-1.405	2.849
		4	31	0.413	0.493	0.399	-0.017	3.961
		5	38	0.507	1.000	0.000		5.353
5		3	1	0.013	0.013	0.034	-2.216	3.000
		4	37	0.493	0.507	0.399	0.017	4.827
		5	37	0.493	1.000	0.000		6.375
6		3	4	0.053	0.053	0.109	-1.613	3.000
		4	32	0.427	0.480	0.398	-0.050	4.356
		5	39	0.520	1.000	0.000		5.802
7		1	2	0.027	0.027	0.062	-1.932	1.000
		2	1	0.013	0.040	0.086	-1.751	1.477
		3	10	0.133	0.173	0.256	-0.941	2.038
		4	36	0.480	0.653	0.369	0.394	3.078
		5	26	0.347	1.000	0.000		4.378
8		2	2	0.027	0.027	0.062	-1.932	2.000
		3	4	0.053	0.080	0.149	-1.405	2.682
		4	27	0.360	0.440	0.394	-0.151	3.631
		5	42	0.560	1.000	0.000		5.018
9		2	1	0.013	0.013	0.034	-2.216	2.000
		3	9	0.120	0.133	0.215	-1.111	3.057
		4	41	0.547	0.680	0.358	0.468	4.306
		5	24	0.320	1.000	0.000		5.684
10		2	1	0.013	0.013	0.034	-2.216	2.000
		3	10	0.133	0.147	0.230	-1.051	3.100
		4	28	0.373	0.520	0.398	0.050	4.114
		5	36	0.480	1.000	0.000		5.396

APPENDIXES C: Successive detail

Successive Interval for Project Economy										
PE. Q1	PE. Q2	PE. Q3	PE. Q4	PE. Q5	PE. Q6	PE. Q7	PE. Q8	PE. Q9	PE. Q10	PE. Q11
6.375	5.801	4.985	6.440	5.556	5.143	6.059	4.814	4.570	3.404	2.469
6.375	5.801	4.985	6.440	5.556	5.143	6.059	3.544	6.080	3.404	1.000
6.375	5.801	4.985	6.440	4.174	5.143	6.059	3.544	4.570	3.404	1.000
3.000	5.801	6.556	4.887	4.174	5.143	6.059	4.814	4.570	2.250	3.918
4.827	4.383	4.985	4.887	4.174	2.000	6.059	2.718	6.080	2.250	2.469

6.375	4.383	4.985	4.887	2.962	3.692	6.059	3.544	6.080	3.404	1.555
6.375	5.801	4.985	4.887	4.174	5.143	4.550	2.000	6.080	3.404	3.918
4.827	5.801	6.556	6.440	2.962	3.692	4.550	2.718	4.570	2.250	3.918
4.827	4.383	6.556	4.887	2.962	3.692	4.550	2.000	4.570	2.250	3.918
6.375	5.801	6.556	4.887	2.962	2.555	6.059	2.718	6.080	3.404	2.469
6.375	4.383	4.985	6.440	4.174	5.143	6.059	3.544	4.570	4.684	3.918
6.375	3.000	4.985	4.887	2.962	2.000	6.059	2.718	6.080	2.250	3.918
6.375	5.801	4.985	6.440	4.174	3.692	4.550	3.544	6.080	4.684	2.469
4.827	4.383	4.985	6.440	5.556	5.143	4.550	3.544	6.080	3.404	3.918
6.375	5.801	6.556	6.440	4.174	3.692	6.059	4.814	4.570	3.404	3.918
6.375	4.383	4.985	4.887	5.556	5.143	6.059	3.544	4.570	3.404	2.469
4.827	4.383	4.985	4.887	4.174	3.692	4.550	2.718	4.570	2.250	2.469
4.827	5.801	6.556	6.440	4.174	3.692	6.059	4.814	6.080	3.404	3.918
4.827	4.383	4.985	4.887	4.174	3.692	4.550	3.544	4.570	3.404	2.469
6.375	5.801	6.556	4.887	5.556	5.143	4.550	4.814	4.570	3.404	3.918
4.827	4.383	6.556	6.440	4.174	5.143	4.550	3.544	4.570	4.684	3.918
4.827	4.383	4.985	4.887	4.174	5.143	6.059	4.814	6.080	3.404	3.918
6.375	5.801	4.985	4.887	5.556	3.692	4.550	4.814	4.570	3.404	2.469
4.827	4.383	6.556	4.887	4.174	3.692	4.550	3.544	6.080	3.404	2.469
4.827	4.383	4.985	6.440	4.174	3.692	6.059	3.544	6.080	3.404	3.918
6.375	5.801	4.985	4.887	5.556	3.692	6.059	4.814	4.570	2.250	2.469
6.375	4.383	4.985	4.887	5.556	5.143	6.059	4.814	6.080	2.250	3.918
6.375	4.383	4.985	6.440	5.556	3.692	4.550	4.814	6.080	3.404	3.918
4.827	4.383	6.556	4.887	4.174	3.692	4.550	4.814	6.080	4.684	3.918
6.375	3.000	6.556	4.887	4.174	3.692	6.059	3.544	4.570	2.250	3.918
4.827	5.801	3.000	6.440	5.556	3.692	4.550	3.544	6.080	4.684	3.918
4.827	4.383	4.985	6.440	5.556	5.143	4.550	2.000	6.080	3.404	3.918
4.827	4.383	6.556	3.000	4.174	5.143	4.550	4.814	4.570	3.404	3.918
6.375	5.801	6.556	6.440	5.556	3.692	6.059	4.814	4.570	2.250	3.918
4.827	5.801	6.556	4.887	4.174	3.692	4.550	4.814	6.080	4.684	3.918
4.827	5.801	4.985	4.887	4.174	5.143	6.059	3.544	6.080	4.684	2.469
6.375	4.383	4.985	4.887	4.174	3.692	4.550	3.544	6.080	3.404	3.918
6.375	4.383	4.985	4.887	5.556	5.143	4.550	4.814	4.570	2.250	3.918
6.375	5.801	4.985	6.440	4.174	3.692	3.000	4.814	6.080	4.684	2.469
4.827	4.383	6.556	4.887	5.556	3.692	4.550	3.544	6.080	4.684	3.918
6.375	4.383	6.556	4.887	4.174	3.692	4.550	4.814	6.080	3.404	3.918
4.827	4.383	4.985	6.440	4.174	5.143	4.550	4.814	4.570	3.404	3.918
4.827	4.383	6.556	4.887	4.174	5.143	6.059	4.814	6.080	4.684	3.918
4.827	5.801	4.985	4.887	5.556	5.143	6.059	3.544	6.080	4.684	3.918
4.827	5.801	4.985	6.440	4.174	3.692	4.550	4.814	4.570	4.684	2.469
6.375	5.801	4.985	4.887	4.174	5.143	4.550	4.814	6.080	3.404	3.918
4.827	4.383	4.985	6.440	4.174	5.143	4.550	4.814	4.570	3.404	2.469
6.375	4.383	4.985	4.887	5.556	5.143	6.059	3.544	4.570	3.404	2.469

6.375	5.801	6.556	4.887	4.174	3.692	6.059	3.544	6.080	4.684	3.918
4.827	4.383	4.985	6.440	5.556	5.143	4.550	4.814	6.080	3.404	2.469
6.375	3.000	6.556	6.440	5.556	5.143	6.059	2.000	6.080	2.250	3.918
4.827	3.000	4.985	4.887	2.000	5.143	6.059	4.814	3.000	2.250	3.918
4.827	4.383	4.985	4.887	2.962	3.692	3.000	2.718	3.000	3.404	2.469
6.375	3.000	6.556	6.440	5.556	5.143	6.059	2.000	6.080	3.404	3.918
4.827	4.383	4.985	4.887	4.174	3.692	4.550	3.544	4.570	3.404	2.469
6.375	4.383	4.985	6.440	5.556	5.143	4.550	3.544	4.570	4.684	3.918
4.827	4.383	6.556	4.887	4.174	5.143	6.059	4.814	4.570	3.404	3.918
4.827	4.383	6.556	6.440	4.174	3.692	6.059	4.814	4.570	3.404	3.918
6.375	5.801	4.985	4.887	4.174	2.555	4.550	3.544	4.570	2.250	2.469
4.827	4.383	4.985	6.440	5.556	5.143	6.059	2.718	6.080	3.404	3.918
4.827	4.383	4.985	6.440	5.556	3.692	6.059	4.814	4.570	4.684	2.469
4.827	4.383	4.985	6.440	2.962	3.692	6.059	3.544	4.570	1.000	1.555
6.375	5.801	6.556	6.440	5.556	5.143	6.059	4.814	6.080	4.684	3.918
4.827	5.801	4.985	4.887	5.556	3.692	4.550	4.814	6.080	3.404	3.918
6.375	5.801	6.556	6.440	4.174	3.692	4.550	3.544	6.080	4.684	3.918
6.375	5.801	6.556	6.440	5.556	5.143	6.059	4.814	6.080	4.684	3.918
4.827	5.801	4.985	4.887	4.174	3.692	6.059	3.544	4.570	4.684	3.918
4.827	4.383	4.985	4.887	5.556	5.143	6.059	4.814	6.080	4.684	3.918
6.375	4.383	4.985	6.440	5.556	3.692	6.059	4.814	6.080	3.404	2.469
4.827	3.000	6.556	4.887	5.556	5.143	4.550	3.544	4.570	4.684	3.918
6.375	4.383	4.985	6.440	4.174	3.692	6.059	3.544	4.570	3.404	2.469
6.375	5.801	6.556	6.440	4.174	5.143	4.550	4.814	4.570	4.684	3.918
6.375	5.801	4.985	4.887	4.174	3.692	6.059	3.544	6.080	4.684	2.469
4.827	4.383	6.556	6.440	5.556	5.143	6.059	3.544	6.080	3.404	2.469
6.375	5.801	6.556	4.887	4.174	5.143	6.059	4.814	4.570	4.684	3.918

Successive Interval for Project Management										
PM. Q1	PM. Q2	PM. Q3	PM. Q4	PM. Q5	PM. Q6	PM. Q7	PM. Q8	PM. Q9	PM. Q10	PM. Q11
4.508	4.335	3.105	4.421	4.513	1.000	1.783	5.657	4.084	5.605	5.516
4.508	5.798	4.631	5.840	5.979	4.768	4.930	5.657	5.532	5.605	5.516
3.138	4.335	1.000	4.421	4.513	4.768	1.783	5.657	4.084	2.000	4.086
2.100	5.798	3.105	5.840	5.979	4.768	3.490	3.141	4.084	4.114	4.086
3.138	4.335	3.105	5.840	5.979	3.339	3.490	5.657	4.084	5.605	4.086
3.138	5.798	4.631	5.840	5.979	4.768	3.490	5.657	5.532	5.605	5.516
3.138	4.335	4.631	5.840	4.513	3.339	3.490	5.657	5.532	4.114	4.086
3.138	4.335	3.105	4.421	4.513	3.339	3.490	4.329	4.084	4.114	4.086
3.138	4.335	3.105	4.421	4.513	3.339	3.490	4.329	5.532	4.114	4.086
4.508	4.335	4.631	4.421	4.513	3.339	3.490	3.141	4.084	4.114	4.086
3.138	5.798	4.631	4.421	4.513	4.768	3.490	4.329	5.532	5.605	2.000

3.138	4.335	4.631	5.840	4.513	4.768	3.490	4.329	5.532	5.605	2.831
3.138	4.335	3.105	4.421	4.513	3.339	3.490	4.329	4.084	4.114	4.086
4.508	5.798	1.618	5.840	4.513	4.768	4.930	5.657	5.532	5.605	4.086
4.508	4.335	4.631	5.840	5.979	4.768	4.930	5.657	5.532	5.605	4.086
4.508	4.335	3.105	4.421	4.513	3.339	3.490	5.657	5.532	4.114	5.516
3.138	4.335	3.105	4.421	4.513	3.339	2.345	3.141	4.084	4.114	4.086
4.508	5.798	3.105	5.840	4.513	3.339	3.490	5.657	5.532	4.114	4.086
3.138	4.335	4.631	3.000	3.000	3.339	3.490	5.657	5.532	4.114	2.831
4.508	5.798	3.105	4.421	5.979	4.768	4.930	5.657	5.532	5.605	4.086
3.138	4.335	4.631	5.840	4.513	3.339	3.490	4.329	4.084	5.605	4.086
3.138	4.335	3.105	4.421	3.000	3.339	3.490	4.329	4.084	4.114	2.831
4.508	4.335	3.105	4.421	4.513	3.339	4.930	5.657	5.532	4.114	4.086
3.138	5.798	3.105	5.840	4.513	4.768	3.490	4.329	5.532	5.605	4.086
4.508	5.798	3.105	4.421	4.513	3.339	3.490	4.329	5.532	5.605	4.086
2.100	4.335	3.105	4.421	4.513	2.012	1.783	3.141	2.000	4.114	2.000
3.138	2.962	3.105	4.421	4.513	4.768	3.490	5.657	4.084	4.114	4.086
4.508	4.335	3.105	3.000	4.513	3.339	2.345	4.329	4.084	4.114	2.831
4.508	4.335	3.105	4.421	3.000	3.339	3.490	5.657	5.532	5.605	4.086
3.138	2.000	1.618	3.000	4.513	3.339	3.490	4.329	4.084	4.114	4.086
3.138	4.335	3.105	4.421	4.513	2.012	2.345	4.329	4.084	5.605	4.086
3.138	4.335	4.631	4.421	5.979	3.339	3.490	3.141	2.783	4.114	5.516
3.138	5.798	3.105	4.421	4.513	3.339	3.490	4.329	5.532	4.114	4.086
4.508	4.335	3.105	3.000	4.513	4.768	4.930	4.329	5.532	4.114	5.516
3.138	2.962	3.105	5.840	5.979	3.339	1.000	2.000	4.084	4.114	4.086
4.508	4.335	4.631	4.421	5.979	4.768	3.490	4.329	4.084	4.114	4.086
4.508	4.335	4.631	4.421	4.513	3.339	2.345	3.141	4.084	5.605	4.086
3.138	4.335	3.105	4.421	5.979	3.339	3.490	4.329	5.532	4.114	2.831
3.138	5.798	3.105	3.000	4.513	2.012	3.490	4.329	4.084	4.114	4.086
3.138	4.335	3.105	4.421	4.513	4.768	1.783	3.141	4.084	4.114	4.086
4.508	4.335	3.105	4.421	4.513	4.768	3.490	4.329	5.532	4.114	4.086
4.508	5.798	4.631	4.421	5.979	3.339	3.490	4.329	4.084	4.114	5.516
4.508	5.798	3.105	3.000	5.979	3.339	4.930	5.657	4.084	5.605	4.086
4.508	4.335	3.105	4.421	5.979	3.339	2.345	4.329	2.783	4.114	5.516
3.138	4.335	4.631	3.000	5.979	4.768	4.930	5.657	5.532	4.114	4.086
3.138	4.335	4.631	4.421	3.000	2.012	3.490	4.329	4.084	2.707	4.086
3.138	4.335	4.631	4.421	5.979	3.339	3.490	4.329	4.084	4.114	5.516
4.508	5.798	4.631	4.421	4.513	3.339	4.930	4.329	4.084	4.114	4.086
3.138	4.335	3.105	4.421	5.979	3.339	3.490	3.141	5.532	5.605	4.086
4.508	5.798	3.105	3.000	4.513	3.339	3.490	4.329	2.783	4.114	4.086
1.618	2.962	3.105	5.840	5.979	3.339	4.930	5.657	5.532	5.605	5.516
4.508	4.335	4.631	5.840	4.513	4.768	3.490	5.657	4.084	4.114	4.086
3.138	4.335	3.105	3.000	3.000	3.339	2.345	4.329	4.084	4.114	2.831
1.000	4.335	4.631	5.840	5.979	3.339	4.930	5.657	5.532	5.605	5.516

3.138	2.962	3.105	4.421	4.513	3.339	3.490	4.329	4.084	4.114	4.086
2.100	4.335	3.105	4.421	4.513	4.768	3.490	3.141	4.084	4.114	4.086
1.618	4.335	3.105	4.421	5.979	3.339	3.490	4.329	4.084	4.114	4.086
4.508	5.798	4.631	5.840	5.979	4.768	3.490	4.329	5.532	5.605	5.516
4.508	4.335	3.105	4.421	4.513	3.339	3.490	4.329	4.084	4.114	4.086
4.508	5.798	4.631	4.421	5.979	3.339	3.490	4.329	5.532	4.114	5.516
4.508	4.335	3.105	4.421	4.513	3.339	3.490	4.329	4.084	4.114	5.516
3.138	2.962	3.105	4.421	4.513	2.012	2.345	3.141	4.084	2.707	2.831
3.138	2.962	3.105	5.840	4.513	3.339	3.490	4.329	5.532	4.114	4.086
3.138	4.335	4.631	4.421	5.979	3.339	3.490	5.657	5.532	5.605	4.086
2.100	2.962	3.105	4.421	4.513	2.012	3.490	4.329	4.084	5.605	5.516
3.138	4.335	4.631	5.840	5.979	3.339	4.930	4.329	4.084	5.605	5.516
3.138	4.335	3.105	4.421	4.513	2.012	3.490	5.657	2.783	2.707	4.086
4.508	5.798	4.631	5.840	5.979	4.768	4.930	5.657	4.084	5.605	5.516
4.508	4.335	3.105	4.421	4.513	3.339	4.930	4.329	4.084	4.114	5.516
3.138	4.335	3.105	5.840	5.979	3.339	3.490	5.657	5.532	4.114	5.516
4.508	4.335	3.105	4.421	4.513	3.339	3.490	4.329	4.084	4.114	4.086
4.508	4.335	3.105	4.421	4.513	3.339	4.930	4.329	4.084	5.605	4.086
2.100	5.798	4.631	4.421	5.979	3.339	3.490	5.657	5.532	4.114	5.516
3.138	4.335	3.105	5.840	5.979	4.768	4.930	4.329	4.084	5.605	4.086
4.508	5.798	4.631	5.840	4.513	2.012	3.490	3.141	4.084	5.605	5.516

Successive Interval for Project Management						
PM. Q12	PM. Q13	PM. Q14	PM. Q15	PM. Q16	PM. Q17	PM. Q18
4.164	3.243	4.861	1.000	6.097	5.387	5.990
5.605	4.448	1.000	1.000	6.097	5.387	5.990
4.164	1.796	3.393	1.000	4.599	5.387	4.516
4.164	2.378	3.393	2.246	6.097	5.387	5.990
5.605	3.243	2.084	2.246	4.599	4.006	5.990
5.605	2.378	3.393	1.000	4.599	4.006	4.516
4.164	3.243	3.393	4.050	6.097	4.006	4.516
4.164	3.243	3.393	4.050	4.599	4.006	4.516
4.164	3.243	3.393	2.246	6.097	4.006	4.516
4.164	2.378	2.084	3.183	4.599	4.006	5.990
4.164	1.796	3.393	3.183	6.097	5.387	4.516
4.164	2.378	4.861	2.246	6.097	4.006	4.516
4.164	3.243	3.393	4.050	4.599	4.006	4.516
5.605	3.243	3.393	3.183	4.599	5.387	5.990
5.605	2.378	3.393	3.183	4.599	4.006	4.516
5.605	3.243	3.393	2.246	4.599	4.006	4.516
4.164	2.378	2.084	2.246	6.097	5.387	5.990

5.605	2.378	3.393	3.183	4.599	4.006	4.516
5.605	3.243	3.393	3.183	4.599	4.006	4.516
5.605	3.243	1.506	1.000	6.097	5.387	5.990
4.164	3.243	4.861	2.246	4.599	5.387	5.990
4.164	2.378	3.393	2.246	6.097	5.387	4.516
4.164	3.243	3.393	3.183	4.599	4.006	5.990
5.605	3.243	3.393	4.050	4.599	5.387	4.516
4.164	2.378	2.084	1.000	6.097	4.006	4.516
2.000	1.000	3.393	1.000	3.000	2.000	3.000
2.849	1.796	4.861	2.246	4.599	2.845	4.516
4.164	2.378	3.393	1.000	4.599	4.006	4.516
5.605	1.796	3.393	1.000	6.097	4.006	5.990
5.605	3.243	3.393	1.000	6.097	5.387	4.516
4.164	1.796	2.084	2.246	4.599	2.845	4.516
4.164	2.378	2.084	1.000	6.097	4.006	4.516
4.164	1.000	4.861	1.000	6.097	4.006	4.516
5.605	1.000	4.861	2.246	6.097	4.006	4.516
4.164	1.796	3.393	2.246	6.097	2.845	3.000
4.164	1.000	3.393	2.246	4.599	5.387	5.990
4.164	2.378	4.861	1.000	3.000	5.387	4.516
2.849	4.448	3.393	2.246	4.599	4.006	4.516
4.164	1.000	3.393	2.246	4.599	4.006	4.516
4.164	3.243	3.393	2.246	4.599	5.387	5.990
5.605	1.796	4.861	1.000	6.097	4.006	4.516
5.605	1.796	3.393	1.000	6.097	4.006	4.516
5.605	1.000	4.861	1.000	4.599	4.006	4.516
2.849	3.243	3.393	2.246	6.097	2.845	5.990
4.164	2.378	3.393	1.000	6.097	5.387	4.516
4.164	2.378	3.393	1.000	4.599	4.006	4.516
4.164	1.796	4.861	1.000	6.097	4.006	5.990
5.605	1.796	3.393	2.246	4.599	4.006	4.516
4.164	1.000	3.393	1.000	4.599	4.006	4.516
5.605	1.796	3.393	2.246	6.097	5.387	3.000
5.605	4.448	4.861	1.000	6.097	5.387	4.516
4.164	3.243	3.393	2.246	6.097	2.845	4.516
2.849	2.378	3.393	3.183	4.599	4.006	4.516
5.605	3.243	3.393	2.246	4.599	4.006	4.516
4.164	3.243	3.393	2.246	4.599	2.845	3.000
5.605	2.378	4.861	1.000	6.097	4.006	5.990
4.164	3.243	3.393	2.246	4.599	4.006	4.516
5.605	3.243	3.393	3.183	4.599	2.845	4.516
4.164	3.243	3.393	1.000	6.097	4.006	4.516
5.605	4.448	3.393	1.000	4.599	5.387	5.990

4.164	3.243	3.393	2.246	4.599	4.006	4.516
2.849	1.000	2.084	2.246	3.000	2.000	3.000
5.605	3.243	4.861	1.000	4.599	4.006	4.516
4.164	4.448	3.393	2.246	4.599	4.006	4.516
4.164	3.243	3.393	2.246	4.599	5.387	5.990
4.164	3.243	4.861	2.246	6.097	4.006	4.516
5.605	3.243	4.861	3.183	4.599	4.006	5.990
5.605	4.448	4.861	1.000	4.599	4.006	5.990
4.164	4.448	3.393	2.246	4.599	2.845	3.000
4.164	3.243	4.861	2.246	6.097	2.000	4.516
4.164	3.243	3.393	2.246	4.599	4.006	4.516
4.164	3.243	3.393	3.183	6.097	4.006	5.990
5.605	4.448	4.861	1.000	4.599	4.006	4.516
4.164	3.243	3.393	2.246	4.599	2.845	3.000
4.164	2.378	3.393	1.000	6.097	4.006	4.516

Successive Interval for Project Management									
GS. Q1	GS. Q2	GS. Q3	GS. Q4	GS. Q5	GS. Q6	GS. Q7	GS. Q8	GS. Q9	GS. Q10
6.250	5.844	4.396	5.353	6.375	5.802	4.378	5.018	2.000	5.396
6.250	5.844	4.396	5.353	6.375	5.802	1.000	2.000	4.306	5.396
6.250	5.844	4.396	5.353	6.375	5.802	1.000	3.631	4.306	5.396
6.250	5.844	4.396	2.000	6.375	4.356	3.078	2.682	5.684	3.100
6.250	5.844	4.396	5.353	6.375	5.802	2.038	5.018	3.057	5.396
4.700	5.844	1.000	2.849	6.375	5.802	4.378	5.018	4.306	2.000
4.700	4.395	3.023	3.961	4.827	5.802	3.078	5.018	4.306	5.396
4.700	4.395	3.023	3.961	4.827	5.802	3.078	5.018	3.057	4.114
4.700	4.395	3.023	3.961	6.375	5.802	2.038	5.018	3.057	3.100
6.250	5.844	4.396	5.353	6.375	5.802	3.078	3.631	3.057	3.100
6.250	5.844	1.909	2.849	4.827	5.802	4.378	2.000	4.306	4.114
6.250	5.844	1.909	3.961	4.827	5.802	2.038	2.682	3.057	3.100
6.250	5.844	3.023	5.353	6.375	4.356	3.078	5.018	4.306	5.396
4.700	4.395	4.396	3.961	4.827	4.356	2.038	2.682	3.057	3.100
4.700	4.395	4.396	5.353	6.375	5.802	3.078	3.631	4.306	5.396
6.250	5.844	4.396	5.353	4.827	4.356	3.078	3.631	4.306	5.396
6.250	4.395	3.023	3.961	4.827	4.356	4.378	5.018	5.684	5.396
6.250	5.844	4.396	5.353	6.375	5.802	3.078	3.631	4.306	4.114
4.700	4.395	3.023	3.961	4.827	4.356	3.078	3.631	4.306	4.114
6.250	5.844	4.396	5.353	6.375	5.802	3.078	5.018	5.684	5.396
4.700	4.395	4.396	2.849	4.827	5.802	2.038	5.018	4.306	4.114
4.700	4.395	4.396	3.961	4.827	5.802	3.078	5.018	4.306	4.114
4.700	5.844	3.023	3.961	4.827	5.802	2.038	5.018	4.306	5.396
6.250	4.395	3.023	5.353	6.375	4.356	4.378	3.631	5.684	4.114

4.700	4.395	4.396	3.961	4.827	5.802	4.378	5.018	5.684	5.396
6.250	4.395	3.023	3.961	4.827	3.000	3.078	3.631	4.306	5.396
6.250	3.000	3.023	5.353	6.375	4.356	3.078	5.018	5.684	4.114
6.250	4.395	3.023	3.961	4.827	4.356	3.078	3.631	4.306	4.114
4.700	4.395	4.396	3.961	4.827	3.000	4.378	3.631	4.306	4.114
6.250	5.844	4.396	3.961	6.375	4.356	4.378	5.018	4.306	4.114
4.700	5.844	4.396	5.353	6.375	4.356	3.078	5.018	4.306	5.396
4.700	4.395	3.023	5.353	4.827	4.356	3.078	3.631	4.306	5.396
6.250	4.395	3.023	3.961	4.827	3.000	2.038	5.018	5.684	4.114
4.700	3.000	3.023	3.961	4.827	4.356	3.078	3.631	4.306	3.100
6.250	5.844	4.396	5.353	6.375	4.356	4.378	3.631	5.684	4.114
6.250	5.844	4.396	5.353	6.375	5.802	4.378	5.018	5.684	4.114
6.250	5.844	1.909	5.353	6.375	3.000	3.078	5.018	4.306	3.100
4.700	4.395	3.023	3.961	4.827	4.356	3.078	3.631	4.306	4.114
6.250	4.395	1.909	2.849	3.000	4.356	3.078	5.018	4.306	5.396
6.250	5.844	4.396	5.353	6.375	4.356	3.078	5.018	5.684	4.114
4.700	4.395	3.023	5.353	6.375	5.802	4.378	5.018	4.306	4.114
4.700	4.395	4.396	3.961	4.827	4.356	4.378	3.631	4.306	4.114
4.700	5.844	4.396	3.961	4.827	4.356	3.078	3.631	4.306	4.114
6.250	5.844	3.023	5.353	4.827	4.356	3.078	3.631	5.684	3.100
6.250	5.844	3.023	5.353	6.375	5.802	3.078	5.018	4.306	5.396
4.700	4.395	3.023	5.353	4.827	5.802	3.078	5.018	4.306	4.114
4.700	4.395	3.023	5.353	4.827	5.802	3.078	3.631	4.306	4.114
6.250	5.844	4.396	3.961	4.827	4.356	3.078	3.631	4.306	5.396
6.250	4.395	3.023	5.353	6.375	5.802	3.078	5.018	5.684	5.396
4.700	4.395	4.396	3.961	6.375	4.356	4.378	5.018	4.306	5.396
3.000	5.844	1.909	5.353	6.375	5.802	1.477	5.018	4.306	5.396
6.250	5.844	4.396	5.353	6.375	4.356	4.378	5.018	5.684	5.396
4.700	4.395	1.909	2.849	4.827	4.356	3.078	3.631	3.057	3.100
6.250	3.000	4.396	5.353	6.375	5.802	2.038	5.018	3.057	5.396
6.250	5.844	4.396	5.353	6.375	5.802	4.378	5.018	5.684	5.396
4.700	4.395	3.023	3.961	4.827	4.356	3.078	5.018	4.306	4.114
6.250	4.395	3.023	5.353	4.827	4.356	4.378	3.631	4.306	5.396
4.700	4.395	3.023	3.961	4.827	5.802	2.038	5.018	5.684	3.100
6.250	5.844	4.396	5.353	6.375	5.802	4.378	2.682	4.306	4.114
6.250	5.844	4.396	5.353	6.375	5.802	4.378	3.631	4.306	5.396
4.700	4.395	3.023	3.961	6.375	5.802	3.078	5.018	4.306	4.114
6.250	4.395	4.396	3.961	4.827	4.356	4.378	5.018	5.684	4.114
6.250	4.395	3.023	3.961	4.827	5.802	3.078	5.018	5.684	5.396
4.700	3.000	3.023	3.961	4.827	5.802	4.378	3.631	5.684	5.396
6.250	5.844	4.396	5.353	6.375	5.802	4.378	5.018	5.684	5.396
6.250	5.844	4.396	5.353	6.375	5.802	4.378	5.018	5.684	5.396
4.700	4.395	3.023	3.961	4.827	4.356	3.078	3.631	4.306	4.114

6.250	5.844	3.023	5.353	4.827	5.802	4.378	5.018	5.684	5.396
6.250	5.844	4.396	5.353	6.375	5.802	4.378	5.018	5.684	5.396
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6.250	5.844	4.396	5.353	4.827	4.356	3.078	5.018	5.684	5.396
6.250	5.844	3.023	5.353	6.375	4.356	4.378	5.018	4.306	4.114
4.700	4.395	4.396	3.961	4.827	4.356	2.038	3.631	3.057	5.396
6.250	5.844	3.023	5.353	4.827	5.802	3.078	3.631	4.306	5.396