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The Impact of Project's Team Competencies on Project's Success: Field Study at Jordanian Pharmaceutical Manufacturing Organizations.

أثر كفايات فريق المشروع على نجاح المشروع: دراسة ميدانية في منظمات صناعة الأدوية الأردنية

Prepared by:

Ahmed Moh'd Yacoub Ayesh

Supervised by:

Dr. Amjad Tweiqat

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Faculty of Business

Middle East University

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Authorization

I, **Ahmed Moh'd Yacoub Ayesh,** authorize Middle East University for graduate studies, to provide hard or soft copies of my thesis to libraries, organizations, or institutions requesting it.

Name: Ahmed Moh'd Yacoub Ayesh

Date: 15 / 06 / 2019.

Signature:

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This thesis of the student Ahmed Moh'd Yacoub Ayesh, which studied "**The Impact of Project's Team Competencies on Project's Success: Field Study at Jordanian Pharmaceutical Manufacturing Organizations**", has been defined, accepted and approved on 29 / 5 /2019

Committee Members:

No.	Name	Title	University	Signature
1.	Dr. Amjad Tweiqat	Supervisor and Member	Middle East University	
2.	Dr. Abdel-Aziz Sharabati	Internal Member	Middle East University	
3.	Prof. Aktham Al-Sarayreh	External Member	Balqa' Applied University	

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Researcher

Ahmed Moh'd Yacoub Ayesh

Dedication

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Researcher

Ahmed Moh'd Yacoub Ayesh

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The Impact of Project's Team Competencies on Project's Success: Field Study at Jordanian Pharmaceutical Manufacturing Organizations.

Prepared by:
Ahmed Moh'd Yacoub Ayesh
Supervised by:
Dr. Amjad Tweiqat

Abstract

The study aims to identify the impact of the project's team competencies (knowledge, experience, skill) on the project's success (time, cost, quality) in Jordanian Pharmaceutical Manufacturing Organizations. The study was based on an analytical descriptive research methodology. The data collection was based on the questionnaire that was designed for the subject of this study; statistical treatments were carried out using the "Statistical Packages in Social Sciences (SPSS)" program, through multiple linear regression, mean, standard deviation, Pearson correlation coefficient, and Cronbach alpha equation.

The results show that the level of the project's team competencies in the Jordanian Pharmaceutical Manufacturing Organizations was generally high in the three dimensions of the project's success (time, cost, quality). The project's success in the Jordanian Pharmaceutical Manufacturing Organizations was a high level in quality dimension, while cost and time dimensions was a moderate level.

The study comes out with a set of recommendations, the most important of the need to give project team members to propose creative ideas for project development and the need to increase attention to the project time dimension and recommending the members of the project teams in Jordanian Pharmaceutical Manufacturing Organizations to reconsider how to employ their competencies (knowledge, experience) to impact more in the time dimension.

Keywords: Project's team Competencies – Project's Success - Jordanian Pharmaceutical Manufacturing Organizations.

أثر كفايـات فريـق المشـروع على نجـاح المشروع: دراسة ميدانية في منظمات صناعة الأدوية الأردنية

إعداد:

أحمد محمد يعقوب عايش

إشراف:

الدكتور أمجد الطويقات

الملخص

تهدف الدراسة إلى التعرف على أثر كفايات فريق المشروع بأبعادها (المعرفة، الخبرة، المهارة) على نجاح المشروع بأبعاده (الوقت، التكلفة، الجودة) في منظمات صناعة الأدوية الأردنية. حيث اعتمدت الدراسة منهج البحث الوصفي التحليلي، وتعتمد في جمع البيانات على الاستبانة التي تم تصميمها لموضوع هذه الدّراسة، وتمتعت أداة الدراسة بدلالات صدق وثبات مقبولين، وتم إجراء المعالجات الإحصائية باستخدام برنامج "الرزم الإحصائية في العلوم الاجتماعية (SPSS)"، من خلال الانحدار الخطي المتعدد والمتوسط الحسابي والانحراف المعياري ومعامل الارتباط بيرسون ومعادلة كرونباخ ألفا.

وأظهرت النتائج: أن مستوى كفايات فريق المشروع في منظمات صناعة الأدوية الأردنية جاء مرتفعاً بشكل عام، في الأبعاد الثلاثة لنجاح المشروع (الوقت، التكلفة، الجودة)، وجاء مستوى نجاح المشروع في منظمات صناعة الأدوية الأردنية في بُعد الجودة بمستوى مرتفع، بينما جاء بُعد التكلفة وبُعد الوقت بمستوى متوسط.

وخرجت الدراسة بمجموعة من التوصيات، أهمها: ضرورة منح أعضـاء فرق المشاريع مساحة مـن الحريـة فـي اقتراح الأفكـار الإبداعيـة لتطويـر المشـاريع، وضـرورة زيـادة الاهتمـام ببعـد وقت المشـروع، وتوصية أعضـاء فرق المشـاريع بإعادة النظر فـي كيفيـة توظيف كفاياتهم (المعرفة، الخبرة)، لتؤثر بصورة أكبر في بعد الوقت لما له من أهمية في نجاح المشاريع.

الكلمات المفتاحية: كفايات فريق المشروع –نجاح المشروع– منظمات صناعة الأدوية الأردنية.

Chapter One: Introduction

1.1 Background:

The rapid and unprecedented growth in the world has led to increased pressure on public and private sectors institutions to achieve their strategic objectives successfully and in less time, which caused to increased use of project management in the past decades, whether by governments or companies, to reach their goals. Project management in public or private sectors is the one that determines the project's path from start to finish. Project management contributes to the development and improvement of companies' ability to plan, implement and control activities, as well as benefit from their human resources and financial resources.

Project team is the most important factor that contributes to a successful project and can lead to successful performance (Abdul-Rahman, et. al. 2005), and the project tools and processes use to help the project team to implement the project and to achieve its objectives, and therefore project management is led by project team members. Best results in project costs by establishing a multi-functional project team early in the project life cycle (Scott-Young and Samson, 2008), project's team competencies and quality effect on project's success (Muller and Jugdev, 2012). The project manager should be able to develop a team, which can help him/her to achieve project objectives (Moghrabi, et. al. 2014). The overall success of the project and the attainment of specific objectives depends on the collaboration of the entire project team and the leadership of its project manager (Cech and Chadt, 2015).

Therefore, it is the time to renew our understanding the impact of the three components of the project's team competencies, which are, knowledge, experience and skill competencies on project's success or failure based on the results of the iron

triangle aspects (time, cost, and quality). Therefore, this study is been made to study the Impact of project's team competencies on the project's success.

1.2 Study Purpose and Objectives:

This study aimed at stating the importance of acquiring the right members to compose the project team and concluding to recommendations that will increase the probability of the project's success. This study sought to achieve the following objectives:

Theoretical Objectives

1. This study aims at bridging the theoretical gap among the subject of the impact of the project's team competencies on the project's success at Jordanian Pharmaceutical Manufacturing Organizations.

2. This study also aims to establish the theoretical basis and literature that will link the project's team competencies and competencies on the project's success. Thus, the findings of this study add new knowledge to the literature as the main contribution regarding the main factors affecting the success of projects in the Jordanian Pharmaceutical Manufacturing.

Practical Objectives

1. Understanding the Impact of the project's team competencies on the project's success.

2. Determining the level of the project's team competencies among Jordanian Pharmaceutical Manufacturing Organizations.

3. Determining the level of project's success among Jordanian Pharmaceutical Manufacturing Organizations.

4. Determining the impact of the project's success in the improvement of Jordanian Pharmaceutical Manufacturing Organizations.

5. Determining the Project team members' characteristics and competencies that will influence on project's success.

1.3 Study Significance and Importance:

Practical Importance

This study focused on studying the relationship between the project's team competencies types in pharmaceutical industries and project's success, in an attempt to develop and use the competencies that are seen to be related the most to efficiency in project management practices. That can be used to enhance and improve the performance of the project team.

Theoretical Importance

This study significance is that the research conducted will enhance the existing body of knowledge on the Jordanian Pharmaceutical Manufacturing Organizations and project's team competencies by providing insight into whether relationships exist between the project's team competencies and the success/failure of projects since there were no researches found investigating this topic. This study may be considered as the first study that investigated the impact of the project's team competencies on the project's success at Jordanian Pharmaceutical Manufacturing Organizations. This study is not only important for practitioners who work in the pharmaceutical industry, but also to other practitioners who work in other industries, as well as, for scholars and researchers.

1.4 Problem Statement

All pharmaceutical manufacturing organizations regularly rely on project management to manage projects implementation to meet different business needs. Through our observation, it was noticed that they struggle to succeed in a majority of initiated projects and many are left neither completed nor closed.

Generally, projects fail for a variety of reasons, such as the project's team competencies (Verner, et. al. 2008). Poor project performance, project was not adequately defined from the beginning, a lack of clearly defined project goals and objectives, project planning was done with insufficient data, poor work definition, failure to define requirements properly, failure to quickly realize change in scope, project schedule not followed, funding problems, poor coordination with vendors …etc. These reasons made by the project team and they need to be recognized and documented (Kendrick, 2015). Moreover, the time management skill of the project team member influence of the project's success positively (Zakaria, et. al. 2015).

During the research, the reasons of the improvement projects will study except drug development projects (R&D), identified their root causes, defined variables that most affect project failure and recommended solutions that increased the probability of the project's success in the Jordanian Pharmaceutical Manufacturing Organizations.

Based on research conducted by Al-Khawaldah (2017) a common problem is to investigate the impact of the project manager's competencies on the project's success for the construction project fields, and with the increasing of projects number in other industries, the industries need more researches to continue and expand this investigation. Thus, the purpose of this research is to investigate the relationship

between the project's team competencies on the project's success in the Jordanian Pharmaceutical Manufacturing Organizations.

1.5 Problem Questions:

Based on the problem statement the following questions can be derived:

The main question:

1. Do the project's team competencies (knowledge, experience, skill) affect the project's success at Jordanian Pharmaceutical Manufacturing Organizations?

According to the project's team competencies components, the main question can be divided into the following **sub-questions**:

1. Do the project's team competencies (knowledge, experience, skill) affect the project's success-(time) at Jordanian Pharmaceutical Manufacturing Organizations?

2. Do the project's team competencies (knowledge, experience, skill) affect the project's success-(cost) at Jordanian Pharmaceutical Manufacturing Organizations?

3. Do the project's team competencies (knowledge, experience, skill) affect the project's success-(quality) at Jordanian Pharmaceutical Manufacturing Organizations?

1.6 Study Hypotheses:

The problem questions can be answered by developing the following hypothesis:

H$_0$: There is no significant impact at ($\alpha \leq 0.05$) of the project's team competencies (knowledge, experience, skill) on the project's success in Jordanian Pharmaceutical Manufacturing Organizations.

According to the project's success components, the main hypothesis can be divided into the following sub-hypotheses:

H$_{01}$: There is no significant impact at ($\alpha \leq 0.05$) of the project's team competencies (knowledge, experience, skill) on the project's success-(time) in Jordanian Pharmaceutical Manufacturing Organizations.

H$_{02}$: There is no significant impact at ($\alpha \leq 0.05$) of the project's team competencies (knowledge, experience, skill) on the project's success-(cost) in Jordanian Pharmaceutical Manufacturing Organizations.

H$_{03}$: There is no significant impact at ($\alpha \leq 0.05$) of the project's team competencies (knowledge, experience, skill) on the project's success-(quality) in Jordanian Pharmaceutical Manufacturing Organizations.

1.7 Study Model:

This study is one of the studies that used the previous researches outcomes and linked the impact of the project's team competencies on the project's success at Jordanian Pharmaceutical Manufacturing Organizations. Thus, the study is focusing on two variables as shown in figure (1) with three dimensions for each as follows.

The first variable is project's team competencies, knowledge competency (which consists from critical analysis and judgment, vision and imagination, and strategic perspective), experience competency (resource management, engaging communication, empowering, developing, and achieving) and skill competency (such as self-awareness, emotional resilience, intuitiveness, interpersonal sensitivity, influence, motivation, and conscientiousness).

The second variable is project's success based on the project's success iron triangle (time, cost, and quality).

Figure (1): Study Model

Independen

Dependent

Project's Team Competencies

H_0

Project's Success

Knowledge

H_{01} Time

Experience

H_{02} Cost

H_{03}

Skill

Quality

Source: The model is developed based on the following previous studies: for independent variable (Ericksen and Dyer, 2004; Zelazny, 2011; Hwang and Ng, 2013); for dependent variable (Muller and Jugdev, 2012; Nixon, et. al. 2012; Zakaria, et. al. 2015).

1.8 Operational and Procedural Definitions of Key Words:

Project's Team Competencies: define procedurally as a set of dimensions, which include (Skill Competency, Knowledge Competency, and Experience competency) they are measured through the items between (1) and (18) in the study tool.

Knowledge Competency: Knowledge competency can be defined as the ability to perform an order or action by understanding its underlying theories of information that a person must meet the needs of the business and it is measured through the items between (1) and (6) in the study tool.

Experience Competency: defines procedurally as the person's personal experiments and special observations acquired during his life, to identify options and solve problems, and it is measured through the items between (7) and (12) in the study tool.

Skill Competency: defines procedurally as know-how, including a person's ability to deal correctly with others such as effective communication skills, time management, creative ideas, problem-solving, and software use, and it is measured through the items between (13) to (18) in the study tool.

Project's Success: defines procedurally as a set of dimensions, which include (Time, Cost, and Quality), and it is measured through the items between (19) and (36) in the study tool.

Time Dimension: defines procedurally as the period that required to implement a project phase using several techniques, and the period for each task is estimated and those periods are aggregated in the estimate of the final project period, and it is measured through the items between (19) and (24) in the study tool.

Cost Dimension: defines procedurally as the expenses that are expended on the project and include many variables like project resources and tools used, and it is measured through the items between (25) and (30) in the study tool.

Quality Dimension: defines procedurally as the specific description of what the outcome of the project should be, and it is measured through the items between (31) and (36) in the study tool.

1.9 Limitations and Delimitation

A limitation is a weakness in the research that could potentially be caused by any element that may hinder data collection within the study.

Human Limitation: This study will be carried on managers working at Jordanian Pharmaceutical Manufacturing Organizations.

Place Limitation: This study will be carried on Jordanian Pharmaceutical Manufacturing Organizations located at Amman – Jordan. All Jordanian Pharmaceutical Manufacturing Organizations are in Amman and have membership in the Jordanian Association of Pharmaceutical Manufacturers (JAPM).

Time Limitation: This study carried out during the second semester of 2019

Study Delimitation: The use of one industry limits its generalizability to other industries. The study was carried out in Jordan; therefore, generalizing results of one industry and/or Jordanian setting to other industries and/or countries may be questionable. Extending the analysis to other industries and countries representing future research opportunities, this can be done by further testing with larger samples within same industries, and including other industries, will help mitigate the issue of generalizing conclusions on other organizations and industries. Moreover, further empirical researches involving data collection over diverse countries especially Arab countries are needed.

Limitations to data access refer to the fact that data gathering through the questionnaires and annual reports is controlled to the period of these questionnaires, which may limit the quality and quantity of the data collected, and lack of similar studies in Jordan and other Arab countries.

Chapter Two: Theoretical and Conceptual Framework

2.1 Introduction

In this chapter, the theoretical background for the main variables studied in this research is presented, covering the areas of concern for this research; the impact of the focused three project's team competencies: skill competency; knowledge competency; and experience competency on project's success based on the iron triangle (time, cost, and quality).

The second part handled the previous studies on those areas are also to be displayed, along with a focus on the applications and measurements of the studied variables in industries.

2.2 Theoretical Framework:

2.2.1 Independent Variable (Project's Team Competencies):

2.2.1.1 Evolution of The Project's Team Competencies:

The Project Management Competency Development (PMCD) Framework defines a project's team competency as the process by which the project team continuously applies their knowledge, skills and personal behaviors with the intention of delivering projects that will meet the requirements of the different stakeholders. The Project Management Institute in 2007 defined it as the process by which the project manager continuously applies his knowledge, skills and personal behaviors with the intention of delivering projects that will meet the requirements of the different stakeholders.

2.2.1.2 The Project's Team Competencies Definitions:

It is hard to define the concept of competency; many researchers use terms close in meaning to competencies such as qualifications, skills or abilities. There are many definitions for the project's team competencies such as:

The underlying characteristics of a person that lead to or cause effective and outstanding performance (Boyatzis, 1982). The knowledge, skills, and experience of a project team member that are necessary to lead a project" (Rowe, 1995). Project's team competencies are defined as capacities and attributes that the project team should possess to realize projects aims and objectives. Project management researchers have been discussing the causes of project failures such as unqualified project team, poor project performance (Verner, et. al. 2008). A cluster of related skill, areas of knowledge, attitudes, and abilities that distinguish high performers (Sanghi, 2016).

2.2.1.3. Importance of The Project's Team Competencies:

Many Authors have mentioned the importance and the effect of the project's team competencies on the project's success. The main elements of every project are the people who carry out the project. They decide whether the project will be a success or a failure. Therefore, the selection of team members to the project team at the stage of determination of project resources is very important. Success or failure is determined by the quality and participation of the project team. To achieve success, the project team must have certain skills and competencies to carry out the entrusted task, and thus, affecting the success of each project on the organization (Abdul-Rahman, et. al. 2005).

2.2.1.4 Dimensions of The Project's Team Competencies:

Most of the authors have mentioned the project's team competencies in shape of three dimensions (Knowledge competency, Experience competency, and Skill competency), as shown in figure (2).

Figure (2): Project's Team Competencies Dimensions

Source: (Ericksen and Dyer, 2004; Zelazny, 2011; Hwang and Ng, 2013).

Project's Team Knowledge Competency: There are many definitions for knowledge competency such as identified professional practice gap of the learner can be based on a range of needs, the general knowledge and skill elements that are perceived as vital for developing project management. (Edum-Fotwe and McCaffer, 2000). It can be defined as a prerequisite for the development of managerial capacities such as judgment, intuition, and acumen, it is information which can be used to gain things something as material as the financial security of as abstract as a time for leisure, it is understanding a basis for contemplation of reflection (Brown, 1994). It can be defined as a resource, it is fundamental to strategic success, and it is fundamental to organizational success, (Wilcox King & Zeithaml, 2003). That can be defined as an

employee or an organization should possess in order to achieve his/its targets (Draganidis & Mentzas, 2006).

Project's Team Experience Competency: There are many definitions for experience competency such as the project team use information from a variety of sources—including personal experience and his own observations to identify options and solve problems, the experience competency of the project team is an important factor that can lead to successful performance (Abdul-Rahman, et. al. 2005). It is the individual's ability to participate in daily activities and a negative effect on the person's overall quality of life (Yaruss & Quesal, 2004). It can be described as the way that team member manages tasks and individuals and can be measured by assessing five leadership concepts: resource management, engaging communication, empowering, developing, and achieving (Muller and Turner, 2010).

Project's Team Skill Competency: There are many definitions for skill competency such as it includes hard skills and soft skills; hard skills are related to the technical features of performing a job. These skills usually require the acquisition of information, which are primarily cognitive in nature and are influenced by an individual's intelligence quotient source. Soft skills are defined as the interpersonal, human, people or behavioral skills needed to apply technical skills and information in the workplace (Rainsbury et al, 2002). That has been tightly defined by the efforts of the employee to create a setting for the empowerment to increase competitive advantage, innovation, and effectiveness and it is important for effective communication with team members and conflict resolution (Draganidis & Mentzas, 2006). It is an ability to work cooperatively in a team environment, understanding group dynamics, Team management, Team building among the project team members (Mahdavian, et. al.

2013). It can be defined by the abilities that a person uses to interact properly with other people. These are skills such as effective communication, assertive communication, time management, teamwork, etc. (Pinto, 2016).

2.2.2 Dependent Variable (Project's Success):

2.2.2.1 Evolution of the Project's Success:

Forty years of research have brought up a variety of new success factors and extended the number of success criteria. Project's success is hereby seen as the achievement of a combination of objective and subjective measures, manifested in the success criteria and measured at the end of a project (Muller and Judgev, 2012). However, success rates still do not meet expectations. Because of that, researchers have started to widen the scope of possible success factors and focus more on the structural characteristics of the project context and its impact on success.

2.2.2.2 The Project's Success Definitions:

There are many definitions for project's success such as project's success has been historically defined as a project that meets its objectives under budget and under schedule and it means the effectively and efficiently achieving all project objectives in scope, on time and within budget (Larson and Gray, 2015). The factor in project's success comprises five sub-dimensions (project efficiency, organizational benefits, project impact, potential, and stakeholder satisfaction) (Joslin & Muller, 2016).

2.2.2.3 Importance of The Project's Success:

Project's success is important to ensure what is being delivered is right and will deliver real value against the business opportunity. Every Organization has strategic goals and the projects that we do for them advance those goals. Project's success is

important because it ensures there is consistency in designing projects properly so that they fit well within the broader context of our organization strategic frameworks. Project's success ensures that the goals of projects closely align with the strategic goals of the business (Joslin & Muller, 2016). In identifying a solid business case, and being methodical about calculating ROI, project's success is important because it can help to ensure the right thing is delivered, that is going to deliver real value.

2.2.2.4 Dimensions of The Project's Success:

Most of the authors have mentioned the project's success in the shape of three dimensions (Time, Cost, and Quality), and it is known as the iron triangle (Muller and Judgev, 2012), as shown in figure (3).

Figure (3): Project's Success Dimensions

Source: (Muller and Jugdev, 2012; Nixon, et. al. 2012; Zakaria, et. al. 2015).

Time Dimension: there are many definitions for time dimension such as it is an important aspect of the construction process, for analytical purposes, and the time required to produce a deliverable is estimated using several techniques. (Stevenson, and Starkweather 2010). One method is to identify tasks needed to produce the deliverables documented in a work breakdown structure or WBS. The work effort for each task is estimated and those estimates are rolled up into the final deliverable estimate

(Stevenson, and Starkweather 2010). It means the period during a project process (Lu, et. al. 2015).

Cost Dimension: It can be defined as the project expenses and it depends on several variables including resources; work packages such as labor rates and mitigating or controlling influencing factors that create cost variances. Tools used in cost are risk management, cost contingency, cost escalation, and indirect costs. (Yang, et. al. 2012)

Quality Dimension: there are many definitions for quality dimension such as it can be defined as the specified requirements to achieve the result. The overall definition of quality is what the project supposed to accomplish, and it is a specific description of what the result should be or accomplish. Over the course of a large project, quality can have a significant impact on time and cost (Joslin and Muller, 2016). A major component of scope is the quality of the final product. The amount of time put into individual tasks determines the overall quality of the project. Some tasks may require a given amount of time to complete adequately but given more time could be completed exceptionally. (Joslin and Muller, 2016).

2.3. The Relationship between the Project's Team Competencies and Project's Success:

Scott-Young and Samson (2008) studied the relationship between project team management and project's success, aimed to study the influence of four types of project team related factors (organizational context, team design, team leadership, team process) on three types of project's success factors (cost, schedule, operability). While Al-Khawaldah (2017) have studied the relationship between project manager competencies and project's success, aimed to examine the impact of three types of project manager competencies (skill, knowledge, experience) on three types of project's success factors (cost, quality, time).

According to that, this study was proposed to study the impact of the project's team competencies (skill, knowledge, and experience) on project's success (cost, quality and time).

2.4. Previous Studies:

In this section, the previous studies focused on the project's team competencies and project's success factors.

Ericksen and Dyer (2004) study titled "**Right from the Start: Exploring the Effects of Early Team Events on Subsequent Project Team Development and Performance**". This study focused on the high- and low-performing project teams differ with respect to how they are mobilized and launched. The effects of their mobilization and launch activities and outputs depend on team progress and performance. The study sample consisted of three high-performance teams and three low-performance teams from (5) major companies. The study followed the comparative approach. Their results produced a group of useful outputs: more time for the teams to do their work, team members with important task-related competencies and enough time to contribute to their projects, and complete rather than incomplete performance strategies.

Abdul-Rahman, et. al. (2005) study titled "**Project Planning and Control in a Developing Economy: Implementation and Realization**". This paper addresses issues associated with the implementation of project planning and control, identification of impacts in the implementation of project planning and the critical success factors of project planning. The study used descriptive and analytical approach. Authors used a questionnaire to collect data, and the survey results showed the critical success factors identified from the survey are Excellent Teamwork and Experienced Team and the

delay in decision-making aggravates the effect of poor planning and control and much of the effect of project planning rests on the pro-activeness of experienced staff.

Dvir, et. al. (2006) study titled "**Projects and Project Managers: The relationship between project managers' personality, project types, and project success**" this study focused on the relationships among three parts: projects types, project manager's personality, and projects' success. The study used descriptive and analytical approach. The findings can be translated into guidelines for managers on how to create a better fit between project managers and the projects assigned to them, so as to ensure greater project's success and the outcomes appear to propose that determined project managers, who feel mistreated by time and get excessively fretful with employees, who love tackling muddled issues and will, in general, think uniquely in contrast to others are probably going to be less productive.

Langer, et. al. (2008) study titled "**Project Managers' Skills and Project Success in IT Outsourcing"** this study focused on what skills do project managers need, and how to do these skills impact project's success, and it recognizes what factors impact IT project results, like cost and client satisfaction. The study used descriptive and analytical approach. Their results advise that while hard skills such as technical or domain expertise may be important in PM, soft skills such as implicit knowledge of organizational culture and clients are very significant for project's success and find that IT or project management experience may not be indicative of an individual's true potential as a PM, in the experience may not always be equivalent with increased soft skills. Hence it may be essential for senior management to provide tailored training to PMs to grow such skills.

Yang, et. al. (2011) study titled "**The association among project manager's leadership style, teamwork and project success**" this paper studied the relationships among the project manager's leadership style, teamwork, and project's success. The study used descriptive and correlative approach. The results of this study indicate that teamwork exhibits a statistically significant influence on project performance. Moreover, we found that project type has a moderating effect on the relationship between teamwork dimensions and project's success.

Zelazny (2011) study titled "**Toward a Theory of Information System Development Success: Perceptions of Software Development Team Members**" this paper focused to increase our understanding of information system project's success by examining how software development team members describe the success of an information system development effort. The study used a qualitative approach by reviewing theoretical literature. Their result indicates that software development team members view information System Development success as being composed of process quality, functional product quality, nonfunctional product quality, team member benefits, and team member satisfaction. Team member satisfaction is influenced by functional product quality, non-functional product quality, process quality, and team member benefits.

Muller and Jugdev (2012) study titled "**Critical success factors in projects Pinto, Slevin, and Prescott – the elucidation of project success**" this paper studied the classic contributions in project's success and related critical success factors (CSF) in the 1980s. The study used the qualitative approach by reviewing theoretical literature, and it discussed the reasons for the impact of project team contributions, and how the

topic of project's success continues to evolve, Authors used a questionnaire to collect data.

Nixon, et. al. (2012) study titled "**Leadership performance is significant to project success or failure: a critical analysis**" this paper focused to explore how the performance of leadership in project management determines project outcomes. The study used descriptive and analytical approach. Their result finds the leadership may influence results are considered. Implications include the need for project managers to prioritize training in leadership skills, and the need for continuous professional improvement to increase leadership outcomes. No one leadership model is suitable throughout the duration of the project. Performance, therefore, must be modified to align with the phases of the project duration.

Hwang and Ng (2013) study titled "**Project management knowledge and skills for green construction: Overcoming challenges**" this paper studied to identify challenges faced by project managers who perform green construction projects and to determine the critical knowledge areas and skills that are essential to respond to this challenge. The study followed the qualitative approach by reviewing literature and survey methodology through interviews with project managers. The result indicates that the project managers may face challenges such as higher costs on green construction projects and that there are elevated risks due to different forms of project delivery.

Cech and Chadt (2015) study titled "**Project Manager and His/Her Competencies**" this paper studied the competencies of a project manager are formed by a set of knowledge, skills, related experience, and ways of behavior and attitudes. It is a technique by which a project manager asserts his/her own professional knowledge to terminate a project successfully. The study used a qualitative approach by reviewing

theoretical literature. Authors focused on basic competencies and high-performance competencies. Basic competencies of a project manager are comprehended as knowledge and skills that are indispensable for an own performance of managerial work and the study results showed the overall success of the project and reaching the set goals depend on the cooperation of a whole project team and the leadership of its project manager.

Todorović, et. al. (2015) study titled "**Project success analysis framework: A knowledge-based approach in project management**" this paper focused to presents an integrated framework for project's success analysis as a new knowledge-based approach in project management. The study used a qualitative approach by reviewing theoretical literature. Their results indicated that all key of the presented framework, when it comes to project's success analysis, have a positive impact on gaining and share of knowledge in project environment, and the benefits this generates for project managers and team members, additionally the documenting previously acquired knowledge contributes to a more effective planning of time schedules, problem-solving, reduced resource consumption, faster task implementation.

Zakaria, et. al. (2015) study titled "**A Study on Leadership Skills of Project Manager for a Successful Construction Project**" this paper studied to identify the impact of project manager's leadership skill to the success of a construction project. A key component in the success of a company is good leadership skills of a project manager and a project can be managed with minimum difficulties occur and interpersonal skills are also needed to reflect the project manager's skill to get employees involved in a project. The study used descriptive and analytical approach. Their result finds that project manager primary features affect the success of the project

positively, and it can be developed through never-ending training and learning. There are seven leadership skills that are very important for a project manager; communication skills, problem-solving and decision-making skills, team building skills, conflict resolution skills, planning and goal setting skills, sense of responsibility and time management skills.

Aga, et. al. (2016) study titled "**Transformational leadership and project success: The mediating role of team-building**" this paper studied and analyzed the relationships between project managers' transformational leadership, team building, and project's success. The study used descriptive and correlative approach. In this study, we found the team building is positively related to project's success. In addition, they recommend in this study that future searches focus on also including objective measures of project's success from project documents. Additionally, we encourage case studies to assess project's success from multiple sources, such as project managers, team members, beneficiaries, sponsors, and other stakeholders. This method would support to document in-depth knowledge of emergent and challenging issues for management and project team in development project perspectives.

Rezvani, et. al. (2016) study titled "**Manager emotional intelligence and project success: The mediating role of job satisfaction and trust**" this paper studied and analyzed how project managers' emotional intelligence contributes to project's success, using a field study. The study used descriptive and analytical approach. Moreover. It noted that the project management skills and leadership skills may be the most critical determinants of successful project outcomes and their result found evidence that job satisfaction and trust mediate the relationship between manger's emotional intelligence and project's success. It recommends that top management

should be aware of the importance of project managers' job satisfaction and trust, which can both serve to boost project's success.

Lindsjørn, et. al. (2016) study titled "**Teamwork Quality and Project Success in Software Development: A Survey of Agile Development Teams**" this paper focused on the effect of teamwork quality on team performance, learning and work satisfaction in agile software teams, and whether this effect differs from that of traditional software teams. The study used descriptive and analytical approach. Their results indicate a positive effect of teamwork quality on team performance was found when team members and team leaders rated team performance, and this study did not find teamwork quality to be higher than in a similar survey on traditional teams. The effect of teamwork quality on team performance was only marginally greater for the agile teams than for the traditional teams.

Al-Khawaldah (2017) study titled "**The Impact of Project Managers' Competencies on Project's success**" this paper studied and analyzed the relationships between project managers competencies on project's success. In this study, the author focused on project managers who have accountability for project's success and the final delivery of the project. The study used descriptive and analytical approach. The outcomes demonstrated that the significance and execution of the two factors were frail. Results demonstrated that the relationship between the project's manager's competencies is solid, between project's success factors extremely solid, and between project managers' competencies and project's success factors are additionally solid. The outcomes additionally demonstrate that there is an effect for project managers' competencies on the project's success, knowledge shows the best impact followed by skills, but the experience does not show a huge impact effect.

2.5 What Distinguishes the Current Study from Previous Studies?

This study distinguished from the other previous studies, on variables collected from above-mentioned studies to examine the impact of the project's team competencies with its dimensions (knowledge, experience, skill) on the project's success in its dimensions (time, cost, quality) in the Jordanian pharmaceutical Manufacturing Organizations. Thus, the present study is considered one of the few studies in the Arab environment, specifically in the Jordanian environment, which dealt with this subject within the limits of the researcher's knowledge.

Moreover, this study will be applied to Jordanian Pharmaceutical Manufacturing Organizations, where variables have not been studied before. Besides, the current study will focus on a very important sector, which is Pharmaceutical Manufacturing Organizations, which have not considered yet in previous studies in Jordan.

Chapter Three: Study Methodology (Methods and Procedures)

3.1 Study Design

The current study is considered as a descriptive as well as cause/effect study, it was used to identify the Impact of project's team competencies on Project's Success at Jordanian Pharmaceutical Manufacturing Organizations (JPMO's). Which based on interpreting the current situation of the phenomenon or problem by determining its conditions and dimensions and characterizing the relations between them. It started with literature review and specialists, experts' interviews to improve the currently used measurement model and explored the relationship between the project team and project's success in the Jordanian Pharmaceutical Manufacturing Organizations. Then, a group of judges conducted to confirm the items, which incorporated in the questionnaire. Finally, the survey carried out and the collected data checked and coded against (SPSS). After testing its normality, validity, and reliability, the correlation between variables tested and the multiples regressions carried out to test the effect.

3.2 Study Population, Sample and Unit of Analysis:

At the time of the study, the Jordanian Pharmaceutical Manufacturing Organizations are only fourteen organizations, which are registered in the Jordanian Association of Pharmaceutical Manufacturers (JAPM) by December 2018, as shown in Appendix (6). This study will target all these organizations, so this negates the need for sampling. These organizations include only 402 managers. The managers are used as a unit of analysis.

3.4 Data Sources:

To achieve the objectives of the study, quantitative and qualitative data were used from the following sources:

Secondary Sources: The researcher sought in the theoretical framework of this study a set of secondary data sources containing the Jordanian Association of Pharmaceutical Manufacturers (JAPM) reports, journals, books, researches, thesis, dissertations, articles, working papers, and the internet.

Primary Sources: primary data collected from managers working in Jordanian Pharmaceutical Manufacturing Organizations through the questionnaire developed by the researcher as a tool to measure the variables of the study.

3.5 Study Tool (The Questionnaire):

The questionnaire was used as the main tool to actualize this study, which was built based on a literature review and developed through a panel of a judge, as shown in the appendix (1). It includes three parts as follows:

Demographic Dimensions: which includes the demographic and functional dimensions of the respondents as follows: Age, gender, education level, the financial value of the largest project he participated in, years of experience, number of projects he participated in during years of experience.

Independent Variable (Project's Team Competencies): Through literature review, it has been identified that there are three important independent sub-variables (knowledge competency, experience competency, and skill competency) that contribute to Jordanian pharmaceutical manufacturing organization's business performance. Independent variable measured by (18) items, divided into three dimensions (Knowledge, experience, and skill).

Dependent Variable (Project's Success): which includes three dimensions (time, cost and quality). Dependent variable measured by (18) items, divided into three dimensions (time, cost and quality), with a total of (36) items for the study tool.

Table (3-1) shows the dimensions and items by which the independent variable (project's team competencies) was measured in its three dimensions.

Table (3-1): The Items of the Independent Variable (Project's Team Competencies)

No.	Independent variable dimensions	No. of items	Items numbering
1	Knowledge	6	1-6
2	Experience	6	7-12
3	Skill	6	13-18
-	**Project's Team Competencies (Total)**	**18**	**1-18**

Table (3-2) shows the dimensions and items by which the dependent variable (project's success) was measured in its three dimensions.

Table (3-2): The Items of the Dependent Variable (Project's Success)

No.	Dimensions	Number of items	Items numbering
1	Time	6	19-24
2	Cost	6	25-30
3	Quality	6	31-36
-	**Project's Success (Total)**	**18**	**19-36**

All variables are measured by five-point Likert-type scale to tap into the respondents' perceptions, ranging from the value (1) (strongly disagree) to value (5) (strongly agree) used throughout the questionnaire.

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

3.5 Data Collection:

The questionnaires were distributed to (220) managers, who are working at Jordanian Pharmaceutical Manufacturing Organizations. The return questionnaires were

(197), with response rate (89.6%), as shown in the appendix (7). After checking the returned questionnaires, the suitable ones were coded against (SPSS) to do further analysis.

3.6 Study Tool Validity:

The validity of the tool was confirmed by content and face validity. For content validity, the literature reviews were used such as the Jordanian Association of Pharmaceutical Manufacturers (JAPM) reports, journals, books, researches, thesis, dissertations, articles, working papers, and the internet. To confirm face validity, the referee committee was used, as shown in the appendix (2).

3.7 Study Tool Reliability:

The reliability of the tool was verified by using Cronbach's Alpha coefficient, which indicates the internal consistency. The values of the alpha reliability coefficients for the dimensions of the study tool were as shown in Table (3-3).

Table (3-3): Reliability Coefficients According to the Cronbach's Alpha Coefficient for the Study Tool and its Dimensions

Variable	Dimensions	Cronbach's Alpha
Independent variable (Project's team Competencies)	Knowledge	0.875
	Experience	0.910
	Skill	0.912
	Project's Team Competencies (Total)	**0.945**
Dependent variable (Project's Success)	Time	0.909
	Cost	0.925
	Quality	0.914
	Project's Success (Total)	**0.953**

The reliability coefficients are suitable for the current study, with a value of the total score measuring in the project's team competencies part (0.945) and the total score measuring for the project's success (0.953). Hence, the study tool can be described as reliable, and the data obtained through the application of the study instrument are subject to an acceptable degree of reliability and can be trusted because the reliability

coefficients are higher than the acceptable limit (70%). The tool of the study is presented in its final form appendix (3).

3.8 Sample Demographic Characteristics:

The characteristics of the study sample were defined in terms of (Age, Gender, Education Level, the Financial Value of the Largest Project you participated in, Years of Experience, Number of Projects you participated in during Years of Experience); Table (3-4) shows the distribution of sample members.

Table (3-4): Description of the Characteristics of the Study Sample

Variables	Category	Number	Percentage
Age	25 – 30	36	18.3%
	31 – 40	106	53.8%
	41 – 50	42	21.3%
	More than 50	13	6.6%
	Total	197	100%
Gender	Male	142	72.1%
	Female	55	27.9%
	Total	197	100%
Educational Level	Diploma	32	16.2%
	Bachelor	138	70.1%
	Master	25	12.7%
	Ph.D.	2	1.0%
	Total	197	100%
The Financial Value of the Largest Project you Participated in	Small project	121	61.4%
	Medium project	37	18.8%
	Large project	16	8.1%
	A huge project	23	11.7%
	Total	197	100%
Years of Experience	Less than 5 years	29	14.7%
	5 – 14 years	97	49.2%
	15 – 20 years	37	18.8%
	more than 20 years	34	17.3%
	Total	197	100%
Number of Projects you Participated in during Years of Experience	Less than 10 projects	116	58.9%
	11 – 20 projects	52	26.4%
	more than 20 projects	29	14.7%
	Total	197	100%

Table (3-4) shows the distribution of sample members according to the Age variable, that the age group (31-40) and their rate was 53.8%, followed by the age group

(41-50) and their rate was (21.3%), then the age group (25-30) and their rate was (18.3%), and the age group (More than 50) with the lowest rate (6.6%).

For the distribution of sample members according to the Gender variable, the percentage of males in the study sample is higher than that of females. The percentage of females is 27.9% compared to 72.1% for males.

As for the distribution of sample members according to the Education Level variable, it was noted the percentage of the sample holds a bachelor's degree was (70.1%), hold a-diploma was (16.2%), followed by hold a master's degree was (12.7%) and the lowest percentage holds a Ph.D. (1%).

As for the distribution of sample members according to the Financial Value of the Largest Project you Participated in, the largest percentage (61.4%) participated in the "Small project", (18.8%) participated in "Medium project", while those who participated in "A huge project" (11.7%), while those who participated in the (Large project) with the lowest percentage (8.1%).

For the distribution of the sample members according to the Number of Years of Experience variable, the category of (5 - 14) years experienced was reached (49.2%) followed by category of (15-20) years experienced was reached (18.8%), then the category of more than 20 years experienced was reached (17.3%), and the category less than 5 years had the lowest rate (14.7%).

For the distribution of the sample members according to the Number of Projects you Participated in during Years of Experience variable, the largest percentage (58.9%) participated in (Less than 10 projects), followed by (26.4%) participated in (11-20 projects), and those who participated in (more than 20 projects) reached (14.7%).

Chapter Four: Study Analysis and Results

4.1. Introduction:

This chapter includes three sections: descriptive analysis, the correlation between variables and multiple regressions to test the relationship between independent variables and dependent variable and Hypothesis Testing.

4.2. Statistical Description of Study Variables (Independent and Dependent)

This study detects the level of the project's team competencies and the level of project's success in the Jordanian Pharmaceutical Manufacturing Organizations, according to the following equation range:

The high level of the alternatives to the answer (5), the low level of alternatives to the answer (1) and subtracting the high level from the low level is equal to (4) and then dividing the difference between the two thresholds (4) on three levels as shown in the following equation: (5-1) ÷ 3 levels (High, Moderate, Low) = 1.33

Accordingly,

1.   The Low level: between 1 and 2.33 (1 + 1.33 = 2.33)

2.   The Moderate level between 2.34 and 3.66 (2.33 + 1.33 = 3.66)

3.   The High level = 3.67 and above.

Thus, the weights are as follows:

The mean between (3.67 and 5.00), that meant the project's team competencies and the project's success in Jordanian Pharmaceutical Manufacturing Organizations in high level.

The mean between (2.34 and 3.66), that meant the project's team competencies and the project's success in Jordanian Pharmaceutical Manufacturing Organizations in the moderate level.

The mean between (1.00 and 2.33), that meant the project's team competencies and the project's success in Jordanian Pharmaceutical Manufacturing Organizations at a low level.

4.2.1 Independent Variable (Project's Team Competencies)

The mean, the standard deviation and the ranking of the sample answers were calculated on the dimensions of the project's team competencies in the study tool in general, and then for each dimension items.

Table (4-1) shows the means, standard deviations and the ranking of the answers of the study sample on the dimensions of the project's team competencies in general.

Table (4-1): Means and Standard Deviations for The Project's Team Competencies, Arranged in Descending Order

No.	Dimensions	Mean	Std. D.	Level	Rank
1	Knowledge	3.94	0.59	High	1
2	Experience	3.83	0.63	High	2
3	Skill	3.72	0.66	High	3
-	**Project's Team Competencies**	**3.83**	**0.54**	**High**	-

Table (4-1) indicates that the project's team competency level was high, with the mean of sample answers on the project's team competencies as a whole was (3.83) and the standard deviation was (0.54).

For the dimensions, knowledge dimension ranked first, where it rated the highest mean (3.94) with a standard deviation of (0.59), followed by experience dimension with a mean of (3.83) and a standard deviation of (0.63), while the skill dimension rated thirdly where the mean is (3.72) with a standard deviation of (0.66).

As for the results of every dimension items of project's team competencies, the results were as follows:

Level of Project's Team Competencies in the Knowledge Dimension

Table (4-2) shows the means, standard deviations and the ranking of the answers of the study sample in the knowledge dimension, which was measured based on (6) items.

Table (4-2): The Means and Standard Deviations of Knowledge Dimension Items, Arranged in Descending Order

No.	Items	Mean	Std. D.	Level	Rank
1	Project team members understand project objectives	4.13	0.68	High	1
2	Project team members aware of the impact of the project on the organization's strategy	3.82	0.82	High	6
3	Project team members are familiar with the culture of the organization	3.92	0.80	High	3
4	Project team members have the basics to work on the project	4.01	0.75	High	2
5	Project team members gather information from their sources	3.87	0.75	High	5
6	Project team members know the basic analysis methods for the project	3.89	0.73	High	4
-	**Knowledge (Total)**	**3.94**	**0.59**	**High**	-

The results in Table (4-2) indicate that all items of knowledge dimension have reached a high level, the mean of the items ranged between (3.82) and (4.13), with standard deviation that range between (0.68) and (0.82) such results indicate that there is agreement on a high level of knowledge items. The average mean of the total knowledge dimension items is (3.94) with standard deviation (0.59) which indicates that there is agreement on a high level of knowledge dimension.

This high level of knowledge among project team members may be due to their training courses in the Jordanian Pharmaceutical Manufacturing Organizations about project management.

Level of Project's Team Competencies in the Experience Dimension

Table (4-3) shows the means, standard deviations and the ranking of the answers of the study sample in the experience dimension, which was measured based on (6) items.

Table (4-3): The Means and Standard Deviations of Experience Dimension Items, Arranged in Descending Order

No	Items	Mean	Std. D.	Level	Rank
7	Project team members have the Experiments for communication	4.00	0.74	High	1
8	Project team members support each other	3.86	0.84	High	3
9	Project team members use the accumulated practical trials they have effectively	3.97	0.80	High	2
10	Project team members take the right decisions during the project	3.73	0.77	High	4
11	Project team members provide suitable options to the stakeholders	3.69	0.88	High	6
12	Project team members are developing their capabilities constantly	3.72	0.89	High	5
-	**Experience (Total)**	**3.83**	**0.63**	**High**	-

The results in Table (4-3) indicate that all items of experience dimension have reached a high level, the mean of the items ranged between (3.69) and (4.00), with standard deviation that range between (0.74) and (0.89) such results indicate that there is agreement on a high level of experience items. The average mean of the total experience dimension items is (3.83) with standard deviation (0.63) which indicates that there is agreement on a high level of experience dimension.

This high result of the experience of the project team members is because the majority of the respondents participated in projects during their work in the Jordanian Pharmaceutical Manufacturing Organizations, which gave them high experience in the field of project management.

Level of Project's Team Competencies in the Skill Dimension

Table (4-4) shows the means, standard deviations and the ranking of the answers of the study sample in the skill dimension, which was measured based on (6) items.

Table (4-4): The Means and Standard Deviations of Skill Dimension Items, Arranged in Descending Order

No	Items	Mean	Std. D.	Level	Rank
13	Project team members manage their time efficiently	3.68	0.84	High	4
14	Project team members can work under pressure	3.93	0.63	High	1
15	Project team members provide alternative solutions to project problems	3.69	0.91	High	3
16	Project team members handle flexibly with project changes	3.62	0.96	Moderate	6
17	Project team members propose creative ideas for project development	3.65	0.87	Moderate	5
18	Project team members use computer programs that related to the project	3.75	0.80	High	2
-	**Skill (Total)**	**3.72**	**0.66**	**High**	-

The results in Table (4-4) indicate that the items of skill dimension ranged from moderate to high level, the mean of the items ranged between (3.62) and (3.93), with standard deviation that range between (0.63) and (0.96) such results indicate that there is agreement on moderate to high level of skill items. The average mean of the total skill dimension items is (3.72) with standard deviation (0.66) which indicates that there is agreement on a high level of skill dimension.

This high result of the skill among project team members may be because the Jordanian Pharmaceutical Manufacturing Organizations are trying to involve employees who have skills in projects management.

4.2.2 Dependent Variable (Project's Success)

The mean, the standard deviation and the ranking of the sample answers were calculated on the dimensions of the project's success in the study tool in general, and then for each dimension items.

Table (4-5) shows the means, standard deviations and the ranking of the answers of the study sample on the dimensions of the project's success in general.

Table (4-5): Means and Standard Deviations for The Project's Success, Arranged in Descending Order

No.	Dimensions	Mean	Std. D.	Level	Rank
1	Time	3.55	0.77	Moderate	3
2	Cost	3.64	0.79	Moderate	2
3	Quality	4.00	0.64	High	1
-	Project's Success (Total)	3.73	0.64	High	-

Table (4-5) indicates that the project's success level was high, with the mean of sample answers on project's team competencies as a whole was (3.73) and the standard deviation was (0.64).

For the dimensions, quality dimension as it ranked the first by a mean of (4.00) and a standard deviation of (0.64) in a high level, followed by cost dimension with a mean of (3.64) and a standard deviation of (0.79), in a high level, while the time dimension came in the third and rated by the least mean (3.55) and a standard deviation of (0.77), in a moderate level.

The results of every dimension items of the project's success were as follows:

Level of Project's Success in the Time Dimension

Table (4-6) shows the means, standard deviations and the ranking of the answers of the study sample in the time dimension, which was measured based on (6) items.

**Table (4-6): The Means and Standard Deviations of Time Dimension Items,
Arranged in Descending Order**

No	Items	Mean	Std. D.	Level	Rank
19	The project activities shall be determined by the beginning date and end date according to a fixed schedule	3.88	0.89	High	1
20	The organization is committed to starting the project on time	3.59	0.94	Moderate	2
21	Project critical activities are completed within the specified time	3.48	0.96	Moderate	4
22	The project is completely implemented on time	3.41	0.97	Moderate	6
23	The organization provides project resources according to the project schedule	3.49	0.92	Moderate	3
24	Project follow-up reports are delivered on time	3.48	0.98	Moderate	5
-	**Time (Total)**	**3.55**	**0.77**	**Moderate**	-

The results in Table (4-6) indicate that the items of time dimension ranged from moderate to high level, the mean of the items ranged between (3.41) and (3.88), with standard deviation that range between (0.89) and (0.98) such results indicate that there is agreement on moderate to high level of time items. The average mean of the total time dimension items is (3.55) with standard deviation (0.77) which indicates that there is agreement on a moderate level of the time dimension.

This moderate result of the project's success-time may be because the activities of the projects in the Jordanian Pharmaceutical Manufacturing Organizations are carried out according to the steps and timetables that may be delayed to ensure the project's success in an optimal manner.

Level of Project's Success in the Cost Dimension

Table (4-7) shows the means, standard deviations and the ranking of the answers of the study sample in the cost dimension, which was measured based on (6) items.

Table (4-7): The Means and Standard Deviations of Cost Dimension Items, Arranged in Descending Order

No	Items	Mean	Std. D.	Level	Rank
25	An appropriate budget is developed for the project	3.75	0.97	High	1
26	The Project budget is managed appropriately	3.69	0.93	High	2
27	Project costs are reduced without affecting the quality	3.57	1.03	Moderate	5
28	The Organization shall provide the financial allocations for the Project according to the specified budget	3.65	0.88	Moderate	3
29	The project is delivered within the estimated costs	3.63	0.89	Moderate	4
30	The project is devoid of excess material	3.54	1.00	Moderate	6
-	**Cost (Total)**	**3.64**	**0.79**	**Moderate**	-

The results in Table (4-7) indicate that the items of cost dimension ranged from moderate to high level, the mean of the items ranged between (3.54) and (3.75), with standard deviation that range between (0.88) and (1.03) such results indicate that there is semi-agreement on moderate to high level of cost items. The average mean of the total skill dimension items is (3.64) with standard deviation (0.79) which indicates that there is agreement on a moderate level of cost dimension.

This moderate result of the project's success-cost may be because the nature of the projects carried out by the Jordanian Pharmaceutical Manufacturing Organizations usually involves a high cost and additional budgets are allocated to the project's success implemented.

Level of Project's Success in the Quality Dimension

Table (4-8) shows the means, standard deviations and the ranking of the answers of the study sample in the quality dimension, which was measured based on (6) items.

Table (4-8): The Means and Standard Deviations of Quality Dimension Items, Arranged in Descending Order

No	Items	Mean	Std. D.	Level	Rank
31	The project achieves its objectives as agreed	3.88	0.81	High	6
32	It is committed by the quality standards for the pharmaceutical industry organizations throughout the project	4.08	0.74	High	1
33	The project is delivered completely in accordance with the quality standards for the pharmaceutical industry organizations	4.05	0.78	High	3
34	Project outputs achieve client requirements	3.90	0.79	High	5
35	The commitment by the quality standards for pharmaceutical industry organizations reduces errors in the project	4.08	0.74	High	1
36	The adherence of the quality standards for pharmaceutical industry organizations enhances the efficiency of project team members	4.01	0.75	High	4
-	**Quality (Total)**	**4.00**	**0.64**	**High**	-

The results in Table (4-8) indicate that all items of quality dimension have reached a high level, the mean of the items ranged between (3.88) and (4.08), with standard deviation that range between (0.74) and (0.81) such results indicate that there is agreement on a high level of quality items. The average mean of the total quality dimension items is (4.00) with standard deviation (0.64) which indicates that there is agreement on a high level of quality dimension.

This high result of the project's success- quality may be because the Jordanian Pharmaceutical Manufacturing Organizations focus on the quality of the pharmaceutical products due to the control and adherence to the high standards of the quality of the pharmaceutical products.

4.3. Correlation between Variables

Bivariate Pearson correlation coefficient was used to test the relationships between independent variables, and between dependent dimensions and finally between independent variables and dependent variable.

Table (4-9): Bivariate Pearson's Correlation among Independent Variables, Dependent Variables, and Between Independent and Dependent Variables.

No.	Variables	1	2	3	4	5	6	7	8
1	Knowledge	-----	**0.560	**0.547	0.805	0**.478	**0.540	**0.532	**0.598
2	Experience	-----	-----	**0.711	0.885	**0.583	**0.641	**0.613	**0.709
3	Skill	-----	-----	-----	0.886	**0.700	**0.641	**0.610	**0.756
4	Project's Team Competencies	-----	-----	-----	-----	**0.687	**0.709	**0.682	**0.803
5	Time	-----	-----	-----	-----	-----	**0.706	**0.516	**0.873
6	Cost	-----	-----	-----	-----	-----	-----	**0.611	**0.907
7	Quality	-----	-----	-----	-----	-----	-----	-----	**0.800
8	Project's Success	-----	-----	-----	-----	-----	-----	-----	-----

**. Correlation is significant at the (0.01) level (2-tailed).

Table (4-9) shows that the relationships between independent variables ranged from moderate to strong, where (r) ranges between (0.547) and (0.711). The relationships between dependent variables are ranged from moderate to strong, where (r) ranges between (0.516) and (0.706). Finally, the relationships between independent variables and dependent variable ranged from moderate to strong, where (r) ranges between (0.478) and (0.700), and the relationships between the total independent variables and the dependent variable are strong, where (r) equals (0.803).

4.4. Hypothesis Testing:

To ensure data are suitability for regression analysis, the following assumptions should be assured. Multicollinearity between the dimensions of the independent variable should be tested by using the Variance Inflation Factory (VIF) and Tolerance.

According to Sekaran (2010) VIF, the value should be less than (10), and Tolerance should be more than (10%). While skewness and Kurtosis coefficient shows the normality and should be between (+1 and -1), as shown in the table (4-10).

Table (4-10): Multicollinearity Test for The Dimensions of The Independent Variable.

Dimensions	Tolerance	VIF	Skewness	Kurtosis
Knowledge	0.642	1.559	-0.551	0.709
Experience	0.453	2.210	-0.494	0.134
Skill	0.462	2.167	-0.361	-0.431

Table (4-10) indicates that Tolerance test values ranged from (0.453) to (0.642), which is greater than (10%), this indicates that there is no high multicollinearity between the dimensions of the independent variable and the VIF coefficient test values for all variables is less than (10) and ranged from (1.559) to (2.210). And It was confirmed that the data follow the natural distribution by calculating the Skewness and Kurtosis coefficient test, the values of the Skewness ranged from (-0.361) to (-0.551), and Kurtosis value ranged from (-0.431) to (0.709), this indicates the data follows the normal distribution.

4.4.1 Test Hypotheses Related to The Impact of the Project's Team Competencies Variable on the Project's Success Variable:

Results related to the main hypothesis, H_0: There is no significant impact at ($\alpha \leq$ 0.05) of project's team competencies (knowledge, experience, skills) on project's success in Jordanian Pharmaceutical Manufacturing Organizations.

To test this hypothesis, the multiple regression analysis was used to measure the impact of the project's team competencies in terms of its three dimensions (knowledge, experience, skill) on the project's success variable. The validity of the model for this hypothesis was confirmed by extracting the results of the multiple regression analysis as shown in Table (4-11).

Table (4-11): The Results of the Multiple Regression Analysis of Project's Team Competencies on Project's Success

Model	r	R^2	Adjusted R^2	f	Sig.
1	0.809	0.655	0.649	122.044	0.000*

*Statistically significant at the level (α ≤ 0.05)

Table (4-11) shows the validity of the main hypothesis test model, as the calculated value of (f) for the model (122.044), which is statistically significant at (α ≤ 0.05), and the value of the (R^2) equal (0.655). This means that the independent variables of the form explain with percentage (65.5%) the variance of the dependent variables (project's success).

Table (4-12) shows the results of the main hypothesis test using multiple regression analysis.

Table (4-12): The Results of the Multiple Regression Analysis of Project's Team Competencies sub-variables on Project's Success

Independent variable (project's team competencies)	Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
	B	Std. Error	Beta		
(Constant)	0.224	0.198		1.133	0.259
Knowledge	0.211	0.057	0.195	3.684	0.000*
Experience	0.280	0.063	0.280	4.454	0.000*
Skill	0.431	0.060	0.450	7.229	0.000*

*Statistically significant at the level (α ≤ 0.05) Dependent variable (Project's Success). T-Tabulated=1.960.

Table (4-12) indicates that the most effective competency from project's team competencies in project's success is skill competency, with a calculated value of (t=7.229) this value has statistical significance value at (α ≤ 0.05), and by the value of (Beta) "the Size effect" value of (0.450). It indicates the improvement in the project's success. In the sense that, the increasing of the skill competency on the project team with the value of one unit contributes on the project's success in Jordanian Pharmaceutical Manufacturing Organizations in general by (45%) of this unit.

The experience competency placed secondly in terms of the impact of the project's success, as the calculated value of (t = 4.454), this value has statistical

significance value at (α ≤ 0.05), and by the value of (Beta) "the Size effect" value of (0.280), it is concluded the increasing of the experience competency of the project team with the value of one unit contributes on the project's success in Jordanian Pharmaceutical Manufacturing Organizations in general by (28%) of this unit.

Followed by knowledge competency placed thirdly in terms of the impact of project's success, as the calculated value of (t = 3.684), this value has statistical significance value at (α ≤ 0.05), and by the value of (Beta) "the Size effect" value of (0.195), it is concluded the increasing of the knowledge competency of the project team by one unit contributes on the project's success in Jordanian Pharmaceutical Manufacturing Organizations in general by (19.5%) of this unit.

According to the previous results, the main hypothesis is rejected, as follows:

There is a positive significant impact at (α ≤ 0.05) of the project's team competencies (knowledge, experience, skills) on the project's success in Jordanian Pharmaceutical Manufacturing Organizations.

The Results of Sub-Hypotheses Emanating from The Main Hypothesis, the Results were as Follows:

Results related to the first sub-hypothesis, H_{01}: There is no significant impact at (α ≤ 0.05) of project's team competencies (knowledge, experience, skills) on project's success -(time) in Jordanian Pharmaceutical Manufacturing Organizations.

To test this hypothesis, the multiple regression analysis was used to measure the impact of the project's team competencies in terms of its three dimensions (knowledge, experience, skills) on the dependent variable project's success – (time). The validity of

the model for this hypothesis was confirmed by extracting the results of the multiple

regression analysis as shown in Table (4-13).

Table (4-13): The Results of the Multiple Regression Analysis of Project's Team Competencies on Project's Success-(Time)

Model	r	R^2	Adjusted R^2	f	Sig.
1	0.715	0.511	0.503	67.125	0.000*

Statistically significant at the level ($\alpha \leq 0.05$)

Table (4-13) shows the validity of the first sub-hypothesis test model, as the

calculated value of (f) for the model (67.125), which is the statistically significant value

at ($\alpha \leq 0.05$), and the value of the (R^2) equal (0.511). This means that the independent

variables of the form explain with percentage (51.1%) the variance of the dependent

variables project's success-(time). Table (4-14) shows the results of the first sub-

hypothesis test using multiple regression analysis.

Table (4-14): The Results of the Multiple Regression Analysis of Project's Team Competencies on Project's Success-(Time)

Independent variable (project's team competencies)	Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
	B	Std. Error	Beta		
(Constant)	0.007	0.288		0.025	0.980
Knowledge	0.135	0.083	0.102	1.625	0.106
Experience	0.167	0.091	0.137	1.831	0.069
Skill	0.639	0.087	0.546	7.367	0.000*

Statistically Significant at the Level (a ≤ 0.05) Dependent Variable Project's Success-(Time). T-Tabulated=1.960.

Table (4-14) indicates that the most effective competency from project's team

competencies in Project's Success-(Time) is Skill competency, with a (t) value of

(7.367), this value has statistical significance value at ($\alpha \leq 0.05$), and by the value of

(Beta) "the Size effect" value of (0.546). It indicates the improvement in the project's

success-(time). In the sense that, the increasing of the skill competency on the project

team with the value of one unit contributes on the project's success-(time) in Jordanian

Pharmaceutical Manufacturing Organizations in general by (54.6%) of this unit.

No impact was shown for the knowledge competency on the project's success-(time), as the calculated value of (t = 1.625), this value is not statistically significant at ($\alpha \le 0.05$), and no impact was shown for the experience competency on the project's success-(time), as the calculated value of (t = 1.831) this value is not statistically significant at ($\alpha \le 0.05$).

According to the previous results the first sub-hypothesis is rejected partly, because there is a positive significant impact at ($\alpha \le 0.05$) of project's team competencies (skill) on project's success-(time) in Jordanian Pharmaceutical Manufacturing Organizations, while there is no significant impact at ($\alpha \le 0.05$) of project's team competencies (knowledge, experience) on project's success-(time) in Jordanian Pharmaceutical Manufacturing Organizations.

Results related to the second sub-hypothesis, H_{02}: There is no significant impact at ($\alpha \le 0.05$) of project's team competencies (knowledge, experience, skills) on project's success-(cost) in Jordanian Pharmaceutical Manufacturing Organizations.

To test this hypothesis, the multiple regression analysis was used to measure the impact of the project's team competencies in terms of its three dimensions (knowledge, experience, skills) on the dependent variable (project's success – cost). The validity of the model for this hypothesis was confirmed by extracting the results of the multiple regression analysis as shown in Table (4-15).

Table (4-15): The Results of the Multiple Regression Analysis of Project's Team Competencies on Project's Success-(Cost)

Model	r	R^2	Adjusted R^2	f	Sig.
1	0.711	0.505	0.497	65.621	0.000*

*Statistically significant at the level ($\alpha \le 0.05$)

Table (4-15) shows the validity of the second sub-hypothesis test model, as the calculated value of (f) for the model (65.621), which is the statistically significant value at ($\alpha \leq 0.05$), and the value of the (R^2) equal (0.505). This means that the independent variables of the form explain with percentage (50.5%) of the variance of the dependent variables (project's success-cost). Table (4-16) shows the results of the second sub-hypothesis test using multiple regression analysis.

Table (4-16): The Results of the Multiple Regression Analysis of Project's Team Competencies on Project's Success-(Cost)

Independent variable (project's team competencies)	Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
	B	Std. Error	Beta		
(Constant)	-0.244	0.294		-0.831	0.407
Knowledge	0.263	0.085	0.196	3.098	0.002*
Experience	0.379	0.093	0.306	4.067	0.000*
Skill	0.375	0.088	0.316	4.243	0.000*

*Statistically Significant at the Level ($\alpha \leq 0.05$) Dependent Variable Project's Success-(Cost). T-Tabulated=1.960.

Table (4-16) indicates that the most effective competency from project's team competencies in (project's success-cost) is the skill competency as the calculated value of (t = 4.243), this value has statistical significance value at ($\alpha \leq 0.05$), and by the value of (Beta) "the Size effect" value of (0.316), it is concluded the increasing of the skill competency of the project's team competencies with the value of one unit contributes on the project's success-(cost) in Jordanian Pharmaceutical Manufacturing Organizations in general by (31.6%) of this unit.

The experience competency placed secondly in terms of the impact of (project's success-cost), as the calculated value of (t = 4.067), this value has statistical significance value at ($\alpha \leq 0.05$), and by the value of (Beta) the "Size effect" value of (0.306). It indicates the improvement in the project's success-(cost). In the sense that,

the increasing of the skill competency on the project team with the value of one unit contributes on the project's success-(cost) in Jordanian Pharmaceutical Manufacturing Organizations in general by (30.6%) of this unit.

Followed by Knowledge competency placed thirdly in terms of the impact of (Project's Success-Cost), as the calculated value of (t = 3.098), this value has statistical significance value at ($\alpha \leq 0.05$), and by the value of (Beta) "the Size effect" value of (0.196), it is concluded the increasing of the knowledge competency of the project's team competencies by one unit contributes on the project's success-(cost) in Jordanian Pharmaceutical Manufacturing Organizations in general by (19.6%) of this unit.

According to the previous results, the second sub-hypothesis is rejected because there is a positive significant impact at ($\alpha \leq 0.05$) of project's team competencies (knowledge, experience, skill) on project's success-(cost) in Jordanian Pharmaceutical Manufacturing Organizations.

Results related to the third sub-hypothesis, H_{03}: There is no significant impact at ($\alpha \leq 0.05$) of project's team competencies (knowledge, experience, skills) on (project's success quality) in Jordanian Pharmaceutical Manufacturing Organizations.

To test this hypothesis, the multiple regression analysis was used to measure the impact of the project's team competencies in terms of its three dimensions (knowledge, experience, skills) on the dependent variable (Project's success – quality). The validity of the model for this hypothesis was confirmed by extracting the results of the multiple regression analysis as shown in Table (4-17).

Table (4-17): The Results of the Multiple Regression Analysis of Project's Team Competencies on Project's Success-(Quality)

Model	r	R^2	Adjusted R^2	f	Sig.
1	0.683	0.466	0.458	56.204	0.000*

*Statistically significant at the level (α ≤ 0.05)

Table (4-17) shows the validity of the third sub-hypothesis test model, as the calculated value of (f) for the model (56.204), which is the statistically significant value at (α ≤ 0.05), and the value of the (R^2) equal (0.466). This means that the independent variables of the form explain with percentage (46.6%) the variance of the dependent variables (project's success-quality). Table (4-18) shows the results of the third sub-hypothesis test using multiple regression analysis.

Table (4-18): The Results of the Multiple Regression Analysis of Project's Team Competencies on Project's Success-(Quality)

Independent variable (project's team competencies)	Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
	B	Std. Error	Beta		
(Constant)	0.911	0.250		3.637	0.000
Knowledge	0.235	0.072	0.213	3.245	0.001*
Experience	0.294	0.079	0.289	3.700	0.000*
Skill	0.280	0.075	0.288	3.716	0.000*

* Statistically Significant at the Level (a ≤ 0.05) Dependent Variable Project's Success-(Quality). T-Tabulated=1.960.

Table (4-18) indicates that the most effective competency from project's team competencies in (project's success-cost) is experience competency, as the calculated value of (t = 3.700), this value has statistical significance value at (α ≤ 0.05), and by the value of (Beta) "the Size effect" value of (0.289). It indicates the improvement in the project's success-(quality). In the sense that, the increasing of the skill competency on the project team with the value of one unit contributes on the project's success-(quality) in Jordanian Pharmaceutical Manufacturing Organizations in general by (28.9%) of this unit.

The skill competency placed secondly in terms of the impact of (project's success-quality), as the calculated value of (t = 3.716), this value has statistical significance value at ($\alpha \leq 0.05$), and by the value of (Beta) "the Size effect" value of (0.288), it is concluded the increasing of the skill competency of the project team with the value of one unit contributes to the project's success-quality in Jordanian Pharmaceutical Manufacturing Organizations in general by (28.8%) of this unit.

Followed by knowledge competency placed thirdly in terms of the impact of (Project's Success-Quality), as the calculated value of (t = 3.245), this value has statistical significance value at ($\alpha \leq 0.05$), and by the value of (Beta) the "Size effect" value of (0.213), it is concluded the increasing of the knowledge competency of the project's team competencies by one unit contributes on the project's success-(quality) in Jordanian Pharmaceutical Manufacturing Organizations in general by (21.3%) of this unit.

According to the previous results, the third sub-hypothesis is rejected because there is a positive significant impact at ($\alpha \leq 0.05$) of project's team competencies (knowledge, experience, skill) on project's success-(quality) in Jordanian Pharmaceutical Manufacturing Organizations.

Chapter Five: Result Discussion, Conclusion and Recommendation

5.1 Introduction:

This chapter contains results discussion, the conclusion of the study, in addition to the recommendations and suggestions based on study results.

5.2 Results Discussion:

The results of the field study showed that the level of the project's team competencies in the Jordanian pharmaceutical organizations was high according to the answers of the sample members at a high level. Knowledge competency as it ranked the first by the highest mean and in a high level, followed by Experience competency with a high level, while the Skill competency came in the third and rated by the least rank, and in a high level. These results are consistent with the (Cech and Chadt, 2015) study, that the competencies of the project manager consist of a set of relevant knowledge, skills, and experience, while they differ with (Al-Khawaldah, 2017) study, which showed the project managers competencies were low.

The results of the field study showed that the level of the project's success in the Jordanian Pharmaceutical Manufacturing Organizations was high. This result is different from Al-Khawaldah (2017) study. The project's success-(quality) came in the first ranked with a high level, followed by the project's success-(cost) in the second-ranked with a moderate level. This result is consistent with (Hwang and Ng, 2013) study, which concluded that project managers might face challenges such as high project costs. While the project's success-(time) came in the third and rated by the least rank, and at a moderate level. This finding is consistent with (Ericksen and Dyer, 2004)

study, which showed that the project team members need enough time to contribute to their projects.

According to the study results, the main hypothesis is rejected, because there is a positive significant impact at ($\alpha \leq 0.05$) of project's team competencies (knowledge, experience, skills) on project's success in Jordanian Pharmaceutical Manufacturing Organizations.

The results showed that the most effective impact project's competencies on the project's success in Jordanian Pharmaceutical Manufacturing Organizations are the skill competency followed by the experience competency, then the knowledge competency. This result is consistent with (Langer, et. al. 2008) study, which showed that skills represented by implicit knowledge are very important to the project's success. In addition, (Abdul-Rahman, et. al. 2005) study, which showed that experience is a very important factor for project's success, this result agreed with (Nixon, et. al. 2012) study, which concluded that the leadership skills of the leadership effect on project management. This result is consistent with (Todorović, et. al. 2015) study, which indicated that the project management based on knowledge had a positive impact on the project's success, and this result agreed with (Lindsjørn, et. al. 2016) study, which showed a positive impact of teamwork skills on the project's success, and it agreed with (Al-Khawaldah, 2017) study, which showed a strong relationship between project managers competencies and project's success factors.

According to the study results the first sub-hypothesis is rejected, because there is a positive significant impact at ($\alpha \leq 0.05$) of project's team competencies (skill) on project's success-(time) in Jordanian Pharmaceutical Manufacturing Organizations, while there is no significant impact at ($\alpha \leq 0.05$) of project's team competencies

(knowledge, experience) on project's success-(time) in Jordanian Pharmaceutical Manufacturing Organizations. This result agreed with (Nixon, et. al. 2012) study, which concluded that the leadership skills of the leadership effect on the project management. This result corresponds with (Lindsjørn, et, al. 2016) study, which showed a positive impact of teamwork skills on the project's success. While differing with (Langer, et. al. 2008) study, which showed that skills represented by implicit knowledge are very important to the project's success. In addition, this result agreed with (Abdul-Rahman, et. al. 2005) study, which showed that experience competency is a success factor for the project. And this result agreed with (Todorović, et. al. 2015) study, which noted that the project management-based on knowledge had a positive impact on the project's success,

According to the study results, the second sub-hypothesis is rejected because there is a positive significant impact at (α ≤ 0.05) of project's team competencies (knowledge, experience, skill) on project's success-(cost) in Jordanian Pharmaceutical Manufacturing Organizations. It has been found that the most effective project's team competencies in the project's success in Jordanian Pharmaceutical Manufacturing Organizations are the experience competency followed by skill competency then knowledge competency. This result is consistent with the results of most previous studies that showed a positive impact of competencies in achieving the project's success, including the cost component as (Langer, et. al. 2008; Nixon, et. al. 2012; Todorović, et. al. 2015; Lindsjørn, et. al. 2016; Al-Khawaldah, 2017).

According to the study results, the third sub-hypothesis is rejected because there is a positive significant impact at (α ≤ 0.05) of project's team competencies (knowledge, experience, skill) on project's success-(quality) in Jordanian Pharmaceutical Manufacturing Organizations. The most effective project's team competencies in the

project's success in the Jordanian Pharmaceutical Manufacturing Organizations were the experience competency followed by skill competency then knowledge competency. This result is consistent with the results of most previous studies that showed a positive impact of the project's team competencies in achieving the project's success of the elements of the project, including the quality component, as (Langer, et. al. 2008; Nixon et. al. 2012; Todorović, et. al. 2015; Lindsjørn, et, al. 2016; Al-Khawaldah, 2017).

5.3 Conclusions

1.   The study finds that the level of competencies owned by the project team members in Jordanian Pharmaceutical Manufacturing Organizations is generally high. However, there is a need to give the project team members the freedom to propose creative ideas for developing the project and their need to be flexible in dealing with the project changes.

2.   The study concludes that the level of the project's success in Jordanian Pharmaceutical Manufacturing Organizations is generally high, especially in the field of project quality. However, the project's success of time and cost needs more attention, organizations need more commitment to start project within the specified time, delivery on time, cost-effectiveness of projects in organizations requiring commitment the provision of financial allocations for the project in accordance with the specific budget, and attention to deliver the project within the estimated costs.

3.   The study concludes that the project team members in the Jordanian Pharmaceutical Manufacturing Organizations employ their competencies in terms of knowledge, experience, and skill to achieve the project's success in these organizations appropriately.

4.   The study concludes that project team members employ enough skill to achieve the project's success in terms of time appropriately, and this may be because time management needs skill, since time management is originally a skill. While the study concludes that, the adequacy of knowledge and experience is not employed properly to achieve the project's success -time.

5.   The study concludes that the project team members in the Jordanian Pharmaceutical Manufacturing Organizations employ their competencies in terms of knowledge, experience, and skill to achieve the project's success-cost.

6.   The study concludes that the project team members in the Jordanian Pharmaceutical Manufacturing Organizations employ their competencies in terms of knowledge, experience, and skill in achieving the project's success-quality.

5.4 Recommendations

Based on the results of the study, a set of recommendations and suggestions were issued, as follows:

Recommendations for the Jordanian Pharmaceutical Manufacturing Organizations:

1.   The study recommends that the Jordanian Pharmaceutical Manufacturing Organizations should grant members of the project teams an opportunity to propose creative ideas for developing projects and give them the ability to deal flexibly with the changes that may occur during the implementation of the project.

2.   The study recommends that Jordanian Pharmaceutical Manufacturing Organizations should pay more attention to the project's time factor by committing more to start the project on time, providing project resources according to the project schedule, completing important project activities within the specified time, and

delivering project follow-up reports on time Selected, and implement the project in full on time.

3.   The study recommends that the Jordanian Pharmaceutical Manufacturing Organizations should review the cost component to achieve the success of the projects by committing the financial allocations to the project in accordance with the specified budget, paying attention to the delivery of the project within the estimated costs. Excess materials after completion of the project.

4.   The study recommends that the members of the project teams in the Jordanian Pharmaceutical Manufacturing Organizations reconsider how to use their knowledge and experience competencies so that they will have an appropriate impact on the success of the time for the projects.

Recommendations for the Researchers:

1.   The study recommends that researchers conduct studies in the same subject, dealing with other economic sectors such as electricity companies, industrial companies, because these companies are service projects and productivity, and they need to study the impact of the competencies of project teams on the success of those projects.

2.   The study recommends that researchers conduct studies in the same fields, dealing with the impact of the project's team competencies on the project's success at Jordanian Pharmaceutical Manufacturing Organizations in other cities.

3.   As the results show that the factors in the model explain (65.5%) of the project's success, the study recommends that other factors that may affect the project's success, such as the size of the project team, and the company's budget allocated to the projects.

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Appendix (1): The Tool for Arbitration Purposes

الأستاذ الدكتور الفاضل.. **المحترم**

السلام عليكم ورحمة الله وبركاته :

ينوي الباحث القيام بإجراء دراسة بعنوان \ (**أثر كفايات فريق المشروع على نجاح المشروع: دراسة ميدانية في منظمات صناعة الأدوية الأردنية**). وأن الهدف من هذه الاستبانة هو جمع البيانات اللازمة لقياس أثر كفايات فريق المشروع (المعرفة، الخبرة، المهارة) على عوامل نجاح المشروع (الوقت، التكلفة، الجودة) من وجهة نظر مدراء الدوائر في الشركات الدوائية، لذا قام الباحث بتطوير استبانة للقياس.

لذا أرجو التكرم بإبداء رأيكم السديد ومقترحاتكم بشأن فقرات الاستبانة فيما إذا كانت صالحة أو غير صالحة، ومدى انتماء كل فقرة للمجال المحدد لها، وبنائها اللغوي، وأية اقتراحات أو تعديلات ترونها مناسبة لتحقيق هدف الدراسة الحالية.

مع خالص شكري وتقدير

إشراف الدكتور	إعداد الطالب
أمجد الطويقات	أحمد محمد عايش
	0796999984

	اسم المحكم:
	الرتبة العلمية:
	التخصص:
	جهة العمل:

التعديلات المقترحة	الانتماء		الملائمة		الوضوح		الفقرة	رقم
	لا	نعم	لا	نعم	لا	نعم		
المعرفة: ويمكن تعريفها على أنها القدرة على أداء أمر أو عمل ما من خلال فهم نظرياته الكامنة في صميم العمل وهي المعارف التي يمتلكها الشخص لسد احتياجات العمل.								≠
							يوجد لدى أعضاء فريق المشروع المعرفة الكافية بأهداف المشروع	1.
							يعرف أعضاء فريق المشروع تأثير المشروع على إستراتيجية المنظمة	2.
							يتوفر لدى أعضاء فريق المشروع المعرفة بثقافة المنظمة	3.
							يملك أعضاء فريق المشروع المعرفة باللغات المطلوبة للمشروع	4.
							يتوفر لدى أعضاء فريق المشروع المعرفة بأساسيات العمل على المشروع	5.
							يملك أعضاء فريق المشروع المعرفة بمصادر جمع المعلومات الخاصة بالمشروع	6.
							يوجد لدى أعضاء فريق المشروع المعرفة بطرق التحليل الأساسية	7.
							يوجد لدى أعضاء فريق المشروع المعرفة بالممارسات الفضلى في إدارة المشاريع	8.
الخبرة: ويمكن تعريفها بما يمتلكه الشخص من تجارب شخصية وملاحظات خاصة يكتسبها خلال حياته، لتحديد الخيارات وحل المشكلات، وتعد تجربة أعضاء فريق المشروع عاملاً هامًا يمكن أن يؤدي إلى أداء ناجح								≠
							يملك أعضاء فريق المشروع الدافعية للتواصل مع بعضهم البعض	9.
							يكسب أعضاء فريق المشروع دعم بعضهم البعض	10.
							يدير أعضاء فريق المشروع خبراتهم المتراكمة	11.
							يستطيع أعضاء فريق المشروع إيصال المعلومات بنجاح لأصحاب المصلحة	12.
							يتوفر لدى أعضاء فريق المشروع الخبرة الكافية لاتخاذ القرارات المناسبة للمشروع	13.
							يعمل أعضاء فريق المشروع على تطوير كفاءاتهم باستمرار	14.

رقم	الفقرة	الوضوح		الملائمة		الانتماء		التعديلات المقترحة
		نعم	لا	نعم	لا	نعم	لا	
≠	**المهارة:** ويمكن تعريفها على أنها معرفة الكيف ومنها المهارات التي يستخدمها الشخص للتفاعل بشكل صحيح مع الآخرين مثل مهارات التواصل الفعال، إدارة الوقت، تقديم الأفكار الإبداعية، حل المشكلات، استخدام البرامج الحاسوبية.							
15.	يمتلك أعضاء فريق المشروع مهارات الاتصال							
16.	يتوفر لدى أعضاء فريق المشروع مهارة إدارة الوقت							
17.	يوجد لدى أعضاء فريق المشروع مهارة جمع المعلومات							
18.	يعمل أعضاء فريق المشروع تحت ضغط العمل							
19.	يعبر أعضاء فريق المشروع عن أفكارهم بشكل واضح							
20.	يقدم أعضاء فريق المشروع الأفكار الإبداعية لتطوير المشروع							
21.	يتعامل أعضاء فريق المشروع بمرونة مع متغيرات المشروع							
22.	يقدم أعضاء فريق المشروع الحلول البديلة لمشاكل المشروع							
23.	يتوفر لدى أعضاء فريق المشروع مهارة استخدام البرامج الحاسوبية المتعلقة بالمشروع							
≠	**الوقت:** ويمكن تعريفه على انه الفترة الزمنية اللازمة لتنفيذ مرحلة في المشروع باستخدام عدة تقنيات، ويتم تقدير الفترة الزمنية لتنفيذ كل مهمة ويتم تجميع تلك الفترات في تقدير الفترة الزمنية النهائية للمشروع.							
24.	تُنجز كل مراحل المشروع حسب الخطة الزمنية الموضوعة لكل مرحلة							
25.	يُسلم المشروع بشكل كامل بالوقت المحدد له							
26.	تُنفذ نشاطات المشروع الحساسة حسب الوقت المخطط لها							
27.	يعمل فريق المشروع على تقليل أوقات أنشطة المشروع دون التأثير على جودتها							
28.	يُعزز المشروع مهارة إدارة الوقت لدى أعضاء فريق المشروع							

رقم	الفقرة	الوضوح		الملائمة		الانتماء		التعديلات المقترحة
		نعم	لا	نعم	لا	نعم	لا	
≠	**التكلفة**: ويمكن تعريفها على أنها المصاريف التي يتم إنفاقها على المشروع، وتشمل على العديد من المتغيرات بما في ذلك موارد المشروع، وحزم العمل والأدوات المستخدمة.							
29.	يتم تطوير موازنة مناسبة للمشروع							
30.	يَلتزم أعضاء فريق المشروع بإدارة موازنة المشروع							
31.	تُدار تكاليف أنشطة المشروع دون تغييرات كبيرة							
32.	يتم تخفيض تكاليف نشاطات المشروع دون التأثير على الجودة							
33.	يخلو المشروع من المواد الزائدة							
34.	تتم السيطرة على مخاطر المشروع							
≠	**الجودة**: ويمكن تعريفها على أنها الوصف المحدد لما يجب أن تكون عليه النتيجة النهائية للمشروع وهو جودة المشروع النهائية							
35.	يُسلم المشروع وفقاً لمعايير الجودة المعتمدة في الشركة							
36.	تفي مخرجات المشروع متطلبات العميل حسب المواصفات العالمية للجودة							
37.	يحقق المشروع أهدافه حسب متطلبات الجودة المعتمدة في الشركة							
38.	يساهم أعضاء فريق المشروع في التقليل من الأخطاء في المشروع							

Appendix (2): List of Referees Committee (*)

No.	Name	Academic rank	Specialization	University
1.	Prof. Ahmed Ali Saleh	Professor	Business Administration	Middle East University
2.	Prof. Aktham Al-Sarayreh	Professor	Administration	Balqa' Applied University
3.	Prof. Mohamed Al Nuaimi	Professor	Business Administration	University of Jordan
4.	Dr. Abdel-Aziz Sharabati	Associate Professor	Business Administration	Middle East University
5.	Dr. Belal Khalaf Sakarneh	Associate professor	Business Administration	Isra University
6.	Dr. Mohammad Al-Adayleh	Associate Professor	Business Administration	Middle East University
7.	Dr. Murad S.Attiany	Associate Professor	Business Administration	Isra University
8.	Dr. Sameer Al-Jabali	Associate Professor	Business Administration	Middle East University
9.	Dr. Mohammad Abdel-Qader.	Assistant professor	Business Administration	Isra University
10.	Dr. Saad Zighan	Assistant Professor	Business Administration	Petra University
11.	Dr. Shadi ALTarifi	Assistant Professor	Marketing	Petra University
12.	Dr. Shafiq kayed shaker	Assistant professor	Business Administration	Isra University
13.	Dr. Mohammad abed abu-Qulah	Assistant professor	Business Administration	Isra University
14.	Dr. Mohammad Almahirah	Assistant professor	Business Administration	Isra University
15.	Dr. Mohammad Alqudah	Assistant Professor	Business Administration	Petra University
16.	Dr. Tamer Koburtay	Assistant Professor	Business Administration	Petra University

* Names listed in alphabetical within each academic rank.

Appendix (3): The Tool is in its Final Form

أخي المستجيب / أختي المستجيبة...

تحية طيبة وبعد،،،

يقوم الباحث حالياً بإجراء دراسة تهدف إلى التعرف على "**أثر كفايات فريق المشروع على نجاح المشروع: دراسة ميدانية في منظمات صناعة الأدوية الأردنية**" استكمالا لمتطلبات الحصول على درجة الماجستير في إدارة الأعمال من جامعة الشرق الأوسط، حيث سيتم إجراء هذه الدراسة على عينة من مدراء الدوائر في منظمات صناعة الأدوية الأردنية.

ولكونكم المعنيين في الأمر مباشرة، نرجو من حضرتكم قراءة هذه الاستبانة بتمعّن والإجابة على فقراتها بوضع إشارة (√) عند تقييم الفقرة التي تعكس رأيكم.

وسيكون لرأيكم الأثر الفعال في مساعدة الباحث في خدمة البحث العلمي، علماً بأن المعلومات الواردة في الاستبانة هي فقط لأغراض البحث العلمي، وسيتم التعامل معها بسرية تامّة.

شاكرين لكم حسن تعاونكم

واقبلوا فائق الاحترام والتقدير،،،

المشرف	الباحث
الدكتور أمجد الطويقات	**أحمد محمد يعقوب عايش**
	ت: 0796999984

• **الجزء الأول: بيانات عامة حول المعني بالدراسة (**مدير الدائرة عضو فريق المشروع**)**

التقييم	الخصائص الشخصية والوظيفية	الرقم
☐ 25 – 30 ☐ 31 – 40 ☐ 41 – 50 ☐ 50 سنة فما فوق	العمر	1.
☐ ذكر ☐ أنثى	الجنس	2.
☐ دبلوم ☐ بكالوريوس ☐ ماجستير ☐ دكتوراه	المستوى التعليمي	3.
☐ مشروع صغير ☐ مشروع متوسط ☐ مشروع كبير ☐ مشروع ضخم	القيمة المالية لأكبر مشروع شاركت به: مشروع صغير = أقل من 50 ألف دينار أردني مشروع متوسط = 50 ألف – 150 ألف دينار أردني مشروع كبير = 150 ألف – 300 ألف دينار أردني مشروع ضخم = أكثر من 300 ألف دينار أردني	4.
☐ أقل من 5 سنوات ☐ 5 – 14 سنوات ☐ 15 – 20 سنوات ☐ أكثر من 20 سنة	عدد سنوات الخبرة	5.
☐ أقل من 10 مشاريع ☐ 11 – 20 مشروع ☐ أكثر من 20 مشروع	عدد المشاريع التي شاركت بها خلال سنوات خبرتك	6.

- **الجزء الثاني: مجالات الدراسة**

المعرفة						
الإجابة						
غير موافق بشدة 1	غير موافق 2	محايد 3	موافق 4	موافق بشدة 5	الفقرة	الرقم
					يوجد لدى أعضاء فريق المشروع فهم بأهداف المشروع	.1
					يدرك أعضاء فريق المشروع تأثير المشروع على إستراتيجية المنظمة	.2
					يتوفر لدى أعضاء فريق المشروع علم بثقافة المنظمة	.3
					يملك أعضاء فريق المشروع أساسيات العمل على المشروع	.4
					يجمع أعضاء فريق المشروع المعلومات من مصادرها	.5
					يعلم أعضاء فريق المشروع طرق التحليل الأساسية الخاصة بالمشروع	.6
الخبرة						
الإجابة						
غير موافق بشدة 1	غير موافق 2	محايد 3	موافق 4	موافق بشدة 5	الفقرة	الرقم
					يمتلك أعضاء فريق المشروع تجارب للتواصل	.7
					يدعم أعضاء فريق المشروع بعضهم البعض	.8
					يستخدم أعضاء فريق المشروع التجارب العملية المتراكمة لديهم بفاعلية	.9
					يتخذ أعضاء فريق المشروع القرارات الصحيحة خلال المشروع	.10
					يقدم أعضاء فريق المشروع الخيارات المناسبة بنجاح للمعنيين	.11
					يطور أعضاء فريق المشروع قدراتهم باستمرار	.12
المهارة						
الإجابة						
غير موافق بشدة 1	غير موافق 2	محايد 3	موافق 4	موافق بشدة 5	الفقرة	الرقم
					يدير أعضاء فريق المشروع وقتهم بكفاءة	.13
					يستطيع أعضاء فريق المشروع العمل تحت الضغط	.14
					يقدم أعضاء فريق المشروع الحلول البديلة لمشاكل المشروع	.15
					يتعامل أعضاء فريق المشروع بمرونة مع متغيرات المشروع	.16
					يقترح أعضاء فريق المشروع الأفكار الإبداعية لتطوير المشروع	.17
					يستخدم أعضاء فريق المشروع البرامج الحاسوبية المتعلقة بالمشروع	.18

	الوقت					
	الإجابة					
غير موافق بشدة 1	غير موافق 2	محايد 3	موافق 4	موافق بشدة 5	الفقرة	الرقم
					نُحدِّد أنشطة المشروع بتاريخ بداية وتاريخ نهاية وفق جدول زمني محدد	19.
					تَلتزم المنظمة بالبدء بالمشروع في الوقت المحدد	20.
					يتم الانتهاء من النشاطات الحرجة للمشروع خلال الفترة الزمنية المحددة	21.
					يُنفذ المشروع بشكل كامل في الوقت المحدد	22.
					تُوفر المنظمة موارد المشروع حسب الجدول الزمني للمشروع	23.
					تُقدَّم تقارير متابعة تنفيذ المشروع في وقتها	24.
	التكلفة					
	الإجابة					
غير موافق بشدة 1	غير موافق 2	محايد 3	موافق 4	موافق بشدة 5	الفقرة	الرقم
					يتم تطوير موازنة مناسبة للمشروع	25.
					تُدار موازنة المشروع بشكل ملاءم	26.
					يتم تخفيض تكاليف المشروع دون التأثير على الجودة	27.
					تُوفر المنظمة المخصصات المالية للمشروع حسب موازنته المحددة	28.
					يُسلَّم المشروع ضمن التكاليف المقدرة	29.
					يخلو المشروع من المواد الزائدة	30.
	الجودة					
	الإجابة					
غير موافق بشدة 1	غير موافق 2	محايد 3	موافق 4	موافق بشدة 5	الفقرة	الرقم
					يُحقق المشروع أهدافه حسب الاتفاق	31.
					يتم الالتزام بمعايير الجودة المعتمدة في منظمات صناعة الأدوية خلال جميع مراحل المشروع	32.
					يُسلَّم المشروع بشكله النهائي وفقاً لمعايير الجودة المعتمدة في منظمات صناعة الأدوية	33.
					تُحقق مخرجات المشروع متطلبات العميل	34.
					يُساهم التقيد بمعايير الجودة المعتمدة في منظمات صناعة الأدوية من التقليل من الأخطاء في المشروع	35.
					يُعزز الالتزام بمعايير الجودة المعتمدة في منظمات صناعة الأدوية من رفع كفاءة أعضاء فريق المشروع	36.

إذا كنت ترغب بالحصول على نتيجة البحث يرجى كتابة معلومات الاتصال بك.

شكرا لوقتكم في استكمال بنود هذه الاستبانة

Appendix (4): The Tool is in English

- **The First Section A: General Information** (Department Manager, Project Team Member)

No	Personal and Functional Characteristics	Evaluation
1.	Age	☐ 25 - 30 ☐ 31 - 40 ☐ 41 - 50 ☐ More than 50
2.	Gender	☐ Male ☐ Female
3.	Educational Level	☐ Diploma ☐ Bachelor ☐ Master ☐ Ph.D.
4.	The Financial Value of the Largest Project you Participated In *(Based on The Project's Budget)* Small Project = Less Than 50 Thousand JD Medium Project = 50 - 150 Thousand JD. Large Project = 150 - 300 Thousand JD. A Huge Project = More Than 300 Thousand JD.	☐ Small Project ☐ Medium Project ☐ Large Project ☐ A Huge Project
5.	Years of Experience	☐ Less Than 5 Years ☐ 5 – 14 Years ☐ 15 – 20 Years ☐ More Than 20 Years
6.	Number of Projects You Participated in During Years of Experience	☐ Less Than 10 Projects ☐ 11 – 20 Projects ☐ More Than 20 Projects

The Second Section B: Project Team Competencies
Please fill the box by (√) which you think that reflects your opinion (Based on the performance in the last project you participated in):

No	Questions	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	Knowledge					
		Answers				
1.	Project team members understand project objectives					
2.	Project team members aware of the impact of the project on the organization's strategy					
3.	Project team members are familiar with the culture of the organization					
4.	Project team members have the basics to work on the project					
5.	Project team members gather information from their sources					
6.	Project team members know the basic analysis methods for the project					
	Experience					
		Answers				
7.	Project team members have the Experiments for communication					
8.	Project team members support each other					
9.	Project team members use the accumulated practical trials they have effectively					
10.	Project team members take the right decisions during the project					
11.	Project team members provide suitable options to the stakeholders					
12.	Project team members are developing their capabilities constantly					

Skill						
No	**Questions**	**Answers**				
		Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
13.	Project team members manage their time efficiently					
14.	Project team members can work under pressure					
15.	Project team members provide alternative solutions to project problems					
16.	Project team members handle flexibly with project changes					
17.	Project team members propose creative ideas for project development					
18.	Project team members use computer programs that related to the project					

The Third Section C: Project's Success Factors

Time						
No	**Questions**	**Answers**				
		Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
19.	The project activities shall be determined by the beginning date and end date according to a fixed schedule					
20.	The organization is committed to starting the project on time					
21.	Project critical activities are completed within the specified time					
22.	The project is completely implemented on time					
23.	The organization provides project resources according to the project schedule					
24.	Project follow-up reports are delivered on time					

Cost						
No	**Questions**	**Answers**				
		Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
25.	An appropriate budget is developed for the project					
26.	The Project budget is managed appropriately					
27.	Project costs are reduced without affecting the quality					
28.	The Organization shall provide the financial allocations for the Project according to the specified budget					
29.	The project is delivered within the estimated costs					
30.	The project is devoid of excess material					

Quality						
No	**Questions**	**Answers**				
		Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
31.	The project achieves its objectives as agreed					
32.	It is committed by the quality standards for the pharmaceutical industry organizations throughout the project					
33.	The project is delivered completely in accordance with the quality standards for the pharmaceutical industry organizations					
34.	Project outputs achieve client requirements					
35.	The commitment by the quality standards for pharmaceutical industry organizations reduces errors in the project					
36.	The adherence of the quality standards for pharmaceutical industry organizations enhances the efficiency of project team members					

Appendix (5): Facilitation letter for the researcher

مكتب رئيس الجامعة
President`s Office

الرقم: در/خ/1486/5
التاريخ : 2019/03/26

لمن يهمه الامر

تحية طيبة وبعد،

لغايات توفير وربط أسس التعاون مع خدمة المجتمع المحلي، نرجو التكرم بالموافقة على تقديم
التسهيلات الممكنة لطالب الماجستير احمد محمد عايش، ورقمه الجامعي (40172086) المسجل
في تخصص إدارة الأعمال/ كلية الأعمال، والذي يتولى القيام بإعداد دراسة أكاديمية بحثية في رسالته،
علماً بأن المعلومات سيتم استخدامها لأغراض البحث العلمي وبصورة سرية.

وتفضلوا بقبول فائق الاحترام...

رئيس الجامعة
26.3.2019
أ.د. محمد محمود الحيلة

Appendix (6): Number of managers in Jordanian Pharmaceutical Manufacturing Organizations (JPMO)

No.	Organization Name	No of managers
1	Arab Center for Pharmaceuticals & Chemicals	10
2	Arab Pharmaceutical Manufacturing Co.	50
3	Dar AlDawa Development & Investment Co.	52
4	Hayat Pharmaceutical Industries Co.	15
5	Jordanian Pharmaceutical Manufacturing Co.	33
6	Hikma Pharmaceutical	66
7	Jordan River Pharmaceutical Industries	11
8	Jordan Sweden Medical & Sterilization	18
9	Middle East Pharmaceutical & Chemical Industries	17
10	Pharma International Co.	55
11	United Pharmaceutical Manufacturing Co.	30
12	Total Quality Pharma (TQPharma)	15
13	Ram Pharmaceutical Industries Co.Ltd.	16
14	Amman Pharma Industries	14
-	Total	402

Appendix (7): Distribution of Sample Members by Study Organizations

No.	Organization Name	No of Managers
1	Arab Center for Pharmaceuticals & Chemicals	5
2	Arab Pharmaceutical Manufacturing Co.	25
3	Dar AlDawa Development & Investment Co.	26
4	Hayat Pharmaceutical Industries Co.	7
5	Jordanian Pharmaceutical Manufacturing Co.	16
6	Hikma Pharmaceutical	32
7	Jordan River Pharmaceutical Industries	5
8	Jordan Sweden Medical & Sterilization	9
9	Middle East Pharmaceutical & Chemical Industries	8
10	Pharma International Co.	27
11	United Pharmaceutical Manufacturing Co.	15
12	Total Quality Pharma (TQPharma)	7
13	Ram Pharmaceutical Industries Co.Ltd.	8
14	Amman Pharma Industries	7
-	Total	197