

The Impact of Project Manager's Knowledge, Skills and Experience on Project's Time, Cost and Quality Ummiah Telecommunication Company-Jordan Telecommunication Sector

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Abstract: The aim of this study is to define the impact of project manager's knowledge, skills and experience on the project's time, cost and quality, through investigating deeply in the field of project management, managers and the success of firm's projects. The research study collected all the needed information by using a research questionnaire in the aim of analysing the research variables. The main objective of this study is to define the impact of managers on the success of projects through investigating the effects of manager's (knowledge, skills and competencies) on the project's (time, cost and quality). Choosing the research study variables lies on enhancing the firm's position between competitors through exploiting the attributes of their managers and giving best results in the presence of the difficult circumstances and high competitiveness. All the needed information had been collected by using regression sample model and analysed through (SPSS).

Key words: Project, project management, project manager, knowledge, project manager competencies, skills competencies, project time, project cost, project quality

INTRODUCTION

Increasing the complexity of achieving projects and the number of project activities which should be executed affected on the growing of project management interests (Dziekonski, 2017). The requirements, constraints and processes which most of projects include gave project management field more importance and values for researches (Dziekonski, 2017).

Project management is defined as the field which includes significant improvement and growth which avoid firms from falling in many troubles and challenges (Croxatto and Greub, 2017). Project manager is considered as important part for any project and represent invaluable asset for the success of the success of project (Croxatto *et al.*, 2015). The nature of projects, the differences between projects and the working with project's team made it necessary for the manager to be more creative and attentive in order to achieve tasks and bring out the best results and added values (Croxatto *et al.*, 2015).

Lately, most of firms decided to enhance their methods in managing and doing businesses because of the increased concentration and demand for project management. Increasing the complexity and the needed of equipment and technology made project richer for studying and exploiting (Dauwalder *et al.*, 2016).

In order to decide that the project is finished successfully it should identical with the project's goals,

time and budget. Most of researches gave more attention for the manager's hard and technical skills which specialized in understanding how they can apply their knowledge in achieving project's goals (Zhang *et al.*, 2013).

Most of researchers agreed that there is a strong relationship between the leader way of managing business project and the success in achieving project's goals (Sunindijo *et al.*, 2007; Zainuddin, *et al.*, 2012). therefore, Cech and Chadt (2015) gave the project manager more valuable role in leading project by applying his style on his team by tech them the professional way of communicating between each other. furthermore, the importance of project manager lies on his capabilities and competencies; Studies have proved that one of the main reasons for the failure of the project lies in the manner of appointment of the project manager which is assigned regardless of its capabilities and qualifications which adversely affects and leads to failure to achieve the final goals of the company (Sunindijo *et al.* 2007; Croxatto *et al.*, 2015; Dauwalder *et al.*, 2016; Dziekonski, 2017).

Other studies have shown that most managers have good skills but the project fails because they don't do what they have really to do and apply during the process of managing project operations and tasks (Oshinubi, 2007; El-Annan, 2015). This study aims to investigating the main impact of project manager's competencies (knowledge, skills and experience) on the success of project's (time, cost and quality).

Literature reviews: In today's, project management is considered is a rich area of research because of its impact on improving and strengthening the company's position among competitors in the global competition market (El-Annan, 2015). PMI. (2008) defined project management as the effort of project's staff to achieve the final project objective.

Project management field is still considered new even if there are many projects executed long time ago because of the stability of the structure, objectives and impact of projects (PMI., 2008).

The importance and the key success for most of projects lies on its manager, there are two main types of skills the manager should have: Technological skills which includes the main project's process (planning, controlling initiating, executing and closing). The soft skills which defined as the knowledge of communicating with people within and outside the project (Neuhauser, 2007). In 2006, Anderson explained that one of the important thing for most of managers in order to protect their projects from falling down is getting people's feedback seriously. The importance of project manager shows on its role in studying the current situation, define what are the procedures which should be taken and using his knowledge to communicate with all (staff, employees, partners, sponsors and owners) and trying to satisfy them all with the aim of making the project succeed (Roque and Marly, 2013).

Most of researches defined the meaning of competency as the collection of technical, soft and characteristics which can be used the measured to strength of project's manager and his ability to manage and take project's authority (Crawford, 2005; Thomas *et al.*, 2008). The role of project manager shows clearly in solving problems and conflicts and these capabilities make him a key and unique between all employees for leading and managing the project successfully (Cleland and Ireland 2006; Dauwalder *et al.*, 2016).

In this research, the researcher focuses on three main competencies (skills, knowledge and experience) and their effects on affecting positively on the project (cost, time and quality). Croxatto *et al.* (2015) defined the meaning of skills competency is defined as the set of capabilities which enable them in leading and managing their relationship with their staff and managers. Skills competency measured by many main points: Motivation skills which defined as having the power to continue in processing project's task and operations and achieving goals in short time (Neuhauser, 2007). Skills awareness the ability of manager in controlling his feelings and their impacts on nature of project (Gibson and Nesbit, 2006;

Dauwalder *et al.*, 2016). The influence skills which measured by the ability of manager to make others understanding the importance of change and help them to make this change identical with project's goals (Neuhauser, 2007). Skills conscientiousness that defined as the commitment with the correct actions with problem and troubles in ethical way even if the trouble is difficult to solve (Ofori, 2013).

Knowledge competency is represented and defined as the ability of manager in making goals and dreams true and it has the following main skills: Correct situation analysis that means determining the benefits and negative effects of applying a specific idea (Gibson and Nesbit, 2006). Manager vision that represents the percentage of manager's innovation in responding and working with the environmental changes and tasks and podcasting and predicting their effects on project in the future (Raiden *et al.*, 2004; Dauwalder *et al.*, 2016). Strategy skills which defined as having an insight into the applied strategy and to know its direct and indirect impact on the activities and tasks of the project and to identify the opportunities available, future threats that can be faced and possible solutions (Dziekonski, 2017).

The last part of the research's independent variables is related with the experience skills which defined as the method that the project's manager and employees executed their processes and tasks (Muller and Turner, 2010). Four main experience skills are defined in this research and those skills are: Resource management skills which defined as the ability of project manager in defining the cost, time and budget of the project and compliance with them in the goal of achieving goals and getting back an effective feedback and evaluate the result in the last of the project (Farooqui *et al.*, 2008; Jiang, 2014). Communication skills that has been defined as the way of communicating with others during the project and giving support in the interests of the project at the right time (Muller and Turner, 2010; Jiang, 2014; Dziekonski, 2017). Empower skills which means the role of manager in supporting and encouraging his staff in order to finish their work and motivate them to innovate new ideas for solving complex challenge and problems (Jiang, 2014). Develop skills that represents the method of exploiting time and cost and producing instant and effective reports (Jiang, 2014).

This research is investigating the effects of independent variables which has been explained above on the success of project that determined in this research by measuring the impact on the following success project variables (cost, time, quality).

The meaning of the success of project management is finishing and accomplishing the project main objectives

and adhering to the specifications which has been set at the beginning of the project (Bauer, 2005; Dziekonski, 2017). Sundqvist *et al.* (2014) defined the main effective components for most of projects that has been represented by cost, time and quality (scope). Cost dependent variables is explain the role of manager in managing the project budget through decrease the cost of staff, controlling and monitoring, direct and indirect cost, production and risk (Yang *et al.*, 2012). Time dependent variable is showing the importance of commitment to project time and how the project staff should use many different techniques to execute project's tasks and achieve goals on time (Ramo, 2002; Stevenson and Starkweather, 2010). Quality (scope) which is represent the most important variable for most of projects because it represents the power of actual project output and it has a strong and effective effects on the first two variables cost and time (Joslin and Muller, 2016).

Theoretical framework: The study studies the effects of project manager competencies on the components of success project, by studying the effects of project manager competencies (skills, knowledge and experience) on the success of project components (cost, time and quality). For that this study suggested for answering the following main question: research is trying to answer following main questions: How the competencies of project manager can affect positively on the components of project's success?

The research study suggested the following three sub-questions in order to answer the research main question:

- Can the skills of project manager effect on the success of project's?
- Does the knowledge project manager has a positive effect on the success of project?
- How the experience of project manager make a difference and effect on the success of?

For answering the study questions, the researcher proposed four hypotheses:

- H_1 : there is a positive relationship between project manager's competencies and the success of project
- $H_{1,1}$: there is a positive relationship between project manager skills competency and the success of project
- $H_{1,2}$: there is a positive relationship between project manager knowledge competency and the success of project
- $H_{1,3}$: There is a positive relationship between project manager experience and the success of project

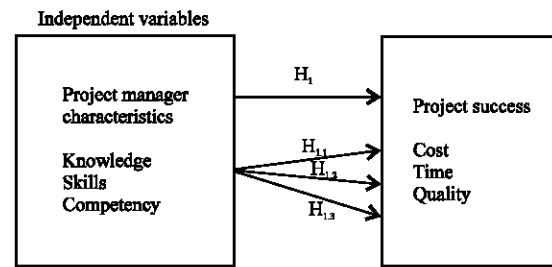


Fig. 1: Components of project manager

Going back for the most important studies related with project management, project manager should enhance always his capabilities because those capabilities can always make a difference and determine the gap between normal and professional manager (Mohamad, 2009; Omidvar *et al.*, 2011a, b). The role and importance of project manager lies on his ability in predicting potential risks, analyse all risks in professional way and define the way for dealing with each risk of them before affecting on the project (Ihesiene, 2014). Furthermore, there are a lot of project manager skills which can be effective on the success of project and those skills are: communication skills, the ability to solve problems, professional decision maker, create a strong project team (Zakaria *et al.*, 2015).

Figure 1 shows the effects of project manager competencies (independent variables) on the project success (dependent variables), the project competencies are represented by three main independent variables: project manager skills which will be represented in this research by motivation, awareness influence, conscientiousness. Project manager knowledge which has been represented in this study by correct situation analysis, manager vision, strategy skills. Project manager experience which represented by resource management, communication skills, empower skills, develop skills. Figure 1 also shows the dependent variables which represented by the most important three components for any project (cost, time and quality).

MATERIALS AND METHODS

The researcher used a research questionnaire in this study in order to get all the needed information about the effects, impact and relationship between research independent and dependent variables by collecting all information from Umniah Telecommunication Company in Jordan. About 85 research questionnaire has been distributed and getting back and 5 research questionnaire eliminated because the information were inaccurate. Choosing respondents done carefully and has been chosen based on the work rank and ability to give the

correct information. Finally, the researcher used SPSS system in order to analyze all the needed information and he used the following SPSS methods and tools in order to ensure the reliability of this study: average, means, Person correlation R, Cronbach's alpha, coefficient Beta. the research questionnaire included 22 questions, those questions have been designed in the goal of studying the relationship between the competencies of project manager (skills, knowledge and experience) and the dependent variables of this research the success of project which represented by (cost, time, quality). Finally, the research questionnaire used Yes/No method for answering all research questions.

RESULTS AND DISCUSSION

This study used SPSS program for analyzing the collected information of 80 respondents of the research questionnaire. About 22 research questions designed and measured by yes/no method. The project manager skill competency were measured by 8 questions, the project manager knowledge were measured by 6 questions and project manager experience were studied by 8 questions. In the goal of investigating the main hypotheses this study made a reliability analyzes for each competency of project manager and the researcher made a multiple linear regression and Person correlation for testing each hypothesis separately and the outcomes were as shown:

- H₁: there is a positive relationship between project manager's competencies and the success of project
- H_{1.1}: there is a positive relationship between project manager skills competency and the success of project
- H_{1.2}: there is a positive relationship between project manager knowledge competency and the success of project
- H_{1.3}: there is a positive relationship between project manager experience and the success of project

Hypothesis 1; There is a positive relationship between project manager's competencies and the success of project:

- H_{1.1}: there is a positive relationship between project manager skills competency and the success of project

Research questions:

- Project manager has to motivate his employees under all project conditions
- Project manager should motivate who work hardly
- Manager should be awareness for any action or decision has been decided
- Manager should be aware for the project specification, constrains and conditions
- Manager has to be leadership and manager in the mind of his staff in order to be committed with the project success conditions (cost, time and quality)
- The positive influence of the manger on his employees can gives back a high incomes. Due to successful compliance with project specifications and conditions for the organization
- Communicating with problems and risks should be always ethical
- The competition and completion the project requirements and achieve goals should be always conscientiousness

Table 1 shown the effects of project manager skills competency represented byour skills variables (motivation, awareness influence and conscientiousness) on the success of project represented by (cost, time and quality). The study analysis explored that project manager skills (motivation, awareness influence and conscientiousness) can explain 86.9% of the effects in the success of project which represent appropriate percent. Also, the coefficient value = 0.869. The relationship between project manager skills (motivation, awareness influence and conscientiousness) and the success of project represented by (cost, time and quality) is a positive relationship and the values of person correlation for the skills four variables were 0.560, 0.551, 0.434 and 0.443.

The value of coefficients $\beta = 0.344, 0.492, 0.64, 0.66$ for the project manager skills (motivation, awareness influence and conscientiousness) and that means conscientiousness is the strongest impact on the success of project with $\beta = 0.66$, then the influence skill competency with $\beta = 0.64$, the awareness skill competency with $\beta = 0.492$ and the last impact of the motivation with $\beta = 0.344$. Furthermore, this study agreed that the skill competency factors (motivation, awareness influence and conscientiousness) have a positive relationship on the

Table 1: Project manager skills (motivation, awareness, influence and conscientiousness) on the success of project

Independent variables	Person correlation (R)	Standardized coefficients (β)	p-value	Hypothesis support	Cronbach's alpha
Motivation	0.560, Sig. = 0.000	0.344	-	-	-
Awareness	0.551, Sig. = 0.001	0.492	0.000	Accept H _{1.1}	-
Influence	0.434, Sig. = 0.000	0.640	-	-	-
Conscientiousness	0.443, Sig. = 0.000	0.660	-	-	-

Table 2: Project manager knowledge (current situation analysis, vision and strategy) on the success of project (cost, time and quality)

Independent variables	Person correlation (R)	Standardized coefficients (β)	p-value	Hypothesis support	Cronbach's alpha
Correct situation analysis	0.81, Sig. = 0.000	0.738	0.000	Accept $H_{1,2}$	-
Vision skill	0.712, Sig. = 0.000	0.428	-	-	-
$R^2 = 0.688$	-	-	-	-	0.953

success of project components (time, cost and quality) at level $\alpha \leq 0.05$ with 0.000 is the p-value. Based on that the researcher accepted the first sub-question $H_{1,1}$. Lastly, the value of alpha coefficient for skill competency paragraph is equal to 0.960 which leads to the result that there is a high internal consistency.

- $H_{1,2}$: there is a positive relationship between project manager knowledge competency and the success of project

Research questions:

- The ability off project manager on analyzing the situation can effect on committed with project constraints
- Analyzing the current situation helps project manager in defining the strengths and weaknesses which help in succession the project
- The vision of project manager has to be compatible with the project success goals
- The vision skill helps the project manager in being committed with the cost, time and quality
- The ability of project manager helps in choosing the correct business strategy
- Strategy skills can helps project manager for being committed with the factors of project success

Table 2 shown the effects of project manager knowledge competency represented by three skills variables (current situation analysis, vision and strategy) on the success of project represented by (cost, time and quality). The study analysis explored that project manager knowledge (current situation analysis, vision and strategy) can explain 68.8% of the effects in the success of project which represent appropriate percent. Also the coefficient value = 0.688. The relationship between project manager knowledge (current situation analysis, vision and strategy) and the success of project represented by (cost, time and quality) is a positive relationship and the values of Person correlation for the skills three variables were 0.81, 0.712 and 0.734.

The value of coefficients $\beta = 0.738, 0.428, 0.331$ for the project manager knowledge (current situation analysis, vision and strategy) and that means current situation analysis is the strongest impact on the success of project

with $\beta = 0.738$, then the vision knowledge competency with $\beta = 0.428$ and the last impact of the strategy with $\beta = 0.331$. Furthermore, this study agreed that the knowledge competency factors (current situation analysis, vision and strategy) have a positive relationship on the success of project components (time, cost and quality) at level ($\alpha \leq 0.05$) with 0.000 is the p-value. Based on that the researcher accepted the second sub question ($H_{1,2}$). Lastly, the value of alpha coefficient for knowledge competency paragraph is equal to 0.953 which leads to the result that there is a high internal consistency.

- $H_{1,3}$: there is a positive relationship between project manager experience and the success of project

Research questions:

- Managing the project resources can effect on the committed with cost, time and quality
- Project manager the only person who understand well the way to manage resources successfully
- Project manager has to teach project's staff the way for communicating in the aim to achieve project's goals
- Project manager communication skills helps the project for being committed with the cost, time and quality
- Project manager has to give his staff more empower and authority
- Project manager empowerment can affect positively on the success of project constraints
- Development skills help the project for being committed with project cost, time and quality
- Project manager helps his staff for developing the overall project with being committed with project constraints and specifications

Table 3 shown the effects of project manager experience competency represented by four skills variables (resource management, communication skills, empower skills, develop skills) on the success of project represented by (cost, time and quality). The study analysis explored that project manager experience (resource management, communication skills, empower skills, develop skills) can explain 77.5% of the effects in

Table 3: Project manager experience (resource management, communication skills, empower skills, develop skills) on the success of project (cost, time and quality)

Independent variables	Person correlation (R)	Standardized coefficients (β)	p-value	Hypothesis support	Cronbach's alpha
Resource management	0.431, Sig. = 0.000	0.498	-	-	-
Communication skills	0.325, Sig. = 0.001	0.356	0.000	Accept H _{1,3}	-
Empower skills	0.221, Sig. = 0.000	0.223	-	-	-
Develop skills	0.212, Sig. = 0.000	0.221	-	-	-
R ² = 0.775	-	-	-	-	0.810

the success of project which represent appropriate percent. Also, the coefficient value = 0.775. The relationship between project manager experience (resource management, communication skills, empower skills, develop skills) and the success of project represented by (cost, time and quality) is a positive relationship and the values of person correlation for the experience four variables were 0.431, 0.325, 0.221 and 0.212.

The value of coefficients $\beta = 0.498, 0.356, 0.223, 0.221$ for the project manager experience (resource management, communication skills, empower skills, develop skills) and that means resource management is the strongest impact on the success of project with $\beta = 0.498$, then the communication skill competency with $\beta = 0.356$, the empower skill competency with $\beta = 0.223$ and the last impact of the develop with $\beta = 0.221$. Furthermore, this study agreed that experience competency factors (resource management, communication skills, empower skills, develop skills) have a positive relationship on the success of project components (time, cost and quality) at level $\alpha \leq 0.05$ with 0.000 is the p-value. Based on that, the researcher accepted the third sub question H_{1,3}. Lastly, the value of alpha coefficient for skill competency paragraph is equal to 0.810 which leads to the result that there is a high internal consistency.

The research study studied and investigated the effects and impacts of project manager's competencies on the success of project. The main goal for this study lies on the competencies of project manager (skills, knowledge and experience) on the components of project success (cost, time and autonomy) are considered success and critical success factors which all firm's managers need to base on the collection and analysis of research study information the analysis of the collected information. In the last, the success of project affected directly based on the effective competencies for the person who leads this project. The creative competition between the Jordanian telecommunication firms to satisfy customers has reached a strong competition at the moment which has made companies think deeply in developing the capabilities of their managers.

Appendix 1; Research questionnaire: The research questionnaire aims to getting and collect information

about the effects of project manager competencies (skills, knowledge and experience) on the success of project which represented by (cost, time and quality). With taking an important note that all the collected information analyzed and treated only for academic research aims. If you can answer all Yes/No questions by putting a click on the right answer.

Research questions:

- Project manager has to motivate his employees under all project conditions
- Project manager should motivate who work hardly
- Manager should be awareness for any action or decision has been decided
- Manager should be aware for the project specification, constrains and conditions
- Manager has to be leadership and manager in the mind of his staff in order to be committed with the project success conditions (cost, time and quality)
- The positive influence of the manger on his employees can gives back a high incomes due to successful compliance with project specifications and conditions for the organization
- Communicating with problems and risks should be always ethical
- The competition and completion the project requirements and achieve goals should be always conscientiousness
- The ability off project manager on analyzing the situation can effect on committed with project constrains
- Analyzing the current situation helps project manager in defining the strengths and weaknesses which help in succession the project
- The vision of project manager has to be compatible with the project success goals
- The vision skill helps the project manager in being committed with the cost, time and quality
- The ability of project manager helps in choosing the correct business strategy
- Strategy skills can helps project manager for being committed with the factors of project success
- Managing the project resources can effect on the committed with cost, time and quality

- Project manager the only person who understand well the way to manage resources successfully
- Project manager has to teach project's staff the way for communicating in the aim to achieve project's goals
- Project manager communication skills helps the project for being committed with the cost, time and quality
- Project manager has to give his staff more empower and authority
- Project manager empowerment can affect positively on the success of project constraints
- Development skills help the project for being committed with project cost, time and quality
- Project manager helps his staff for developing the overall project with being committed with project constraints and specifications

CONCLUSION

Focusing on project manager competencies (skills, knowledge and experience) and the success of project (cost, time and quality) is getting more import in today's especially in Orange telecommunication company in Jordan in order to enhance the firm for being number one in Jordan telecommunication sector. Most of mangers and head of departments within Orange firm understood the importance of enhancing project manager's competencies in order to achieve project's goals. Finally, project manager competencies represented in this research by skills, knowledge and experience and their effects on the success project's components represented by cost, time and quality proved their capabilities on achieving project's goals, affects positively on project components cost, time and quality and being committed with the constraints of project within orange firm. The study goal is providing future studies with valuable and new information about the capabilities of project manager competencies and their effects on the success of project. The main study results have been matched with previous reviews which ensured and confirmed the main reason for studying and investigating the effects of project manager competencies on the success of project. The study provides other gives future research with some valuable recommendations to study and taking other project manager competencies which make all those competencies fully studied well in the future and the collected information will become more valuable for researches and firms.

ACKNOWLEDGEMENT

The reseacher of this study wants to thank his great applied science private university-Jordan for all supports. Finally, the researchers greets his family members and lovely wife for supporting and motivating him in all the time.

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