Assessing The Effect Of Managerial Roles On Project Performance At Kuwait Institute For Scientific Research (KISR)

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Abstract

The main purpose of this study was to examine the impact of the main six managerial roles performed by project leaders on project successfulness at Kuwait Institute for Scientific Research (KISR). For that purpose, this study used managerial work survey developed by (McCall and Segrist, 1980) which assesses the six managerial functions of the project leaders: leader, liaison, monitor, spokesperson, entrepreneur, and resource allocator. While project success will be measured using a multidimensional framework developed by (Shenhar, A., Levy, O., and Dvir, D., 1997) which took into consideration four aspects of the project: Design goal, impact on customer, benefits to organization, and preparing for future. The opinions of 97 respondents from KISR's project leaders were investigated and examined. The empirical results of this paper shows that spokesperson role, entrepreneur role, and resource allocator role are the roles that affect project successfulness at KISR, while Leader role, monitor role, and liaison role were found irrelevant factors that don't have an effect on project performance.

1. Introduction

Since the development of project management as a discipline in 1960s, the importance of such management has increased substantially to become one of the main milestones of the survival of organizations and one of the essentials to achieve project success. The project management philosophy has expanded over years from a limited discipline that includes few functional areas in the organization to a more comprehensive one that incorporate every function in the organization. Project management is defined as the "planning, organizing, directing, and controlling of company resources for a relatively short-term objectives that has been established to complete specific goals and objectives"¹. The main purpose of project management is to achieve a project success which is the most disputed issue in the field of project management. Scholars defined project success as "the set of principals or standards by which favorable outcomes can be completed with a set of specifications"². Many studies took the project success as their main topic to determine the measures that can be used to assess the successfulness of projects. Most of these studies agreed on the fact that to consider a project as a successful one, it should meet schedule, budget, and predetermined objectives. However, in this study project success will be measured using a multidimensional framework developed by (Shenhar, A., Levy, O., and Dvir, D., 1997) which took into consideration four aspects of the project. According to that study, the characteristics of successful projects can be categorized into distinct dimensions:

¹ Kerzner, Harold. (2009). Project management: A systems approach to planning, scheduling, and controlling. 2012 Jersey. Wilev Sons Retrieved from New John & Inc. June 4. http://books.google.com.kw/books?hl=ar&lr=&id=4CqvpWwMLVEC&oi=fnd&pg=PR21&dq=project+manag ement&ots=LNmQvuzA_u&sig=08gntspBoS4ViZoCkm_UbZFjYg&redir_esc=y#v=onepage&q=project%20 management&f=false.

² Dyett, Valecia. (2011). Roles and characteristics of the project manager in achieving success across the project life cycle.

Design goal, impact on customer, benefits to organization, and preparing for future. In this paper, these dimensions are going to be used to distinguished success projects from non-successful ones or as it called "challenged projects" by satisfying six major areas: (1) projects that is completed on-time, (2) within budget, (3) with all features and specifications specified, (4) satisfy customers and meet their requirements, (5) increase the organization's profitability, and (6) contribute to future projects which are going to be analyzed in this paper.

Project leader on the other hand is a further fundamental matter that significantly contributes to either success or failure of the project through the life cycle of the project. Project leader is generally defined as "the person accountable for delivering project safely, on time, within budget, and to the desired performance or quality standards determined by the clients"³. In most organization around the world, the success of the project is accounted on the project leader who is capable of successfully deliver a complete project. Given that the project is a set of interconnected activities that need to be performed on specific time and within predetermined budget with predetermined specifications, it is critical to conduct a series of efforts in order to achieve the desired outcomes. For that reason, project success can be attributed to project leader's skills, abilities, roles, and leadership styles that might differ from one leader to another and thus critically affect the project. Since the development of the project management discipline, countless studies were conducted to unveil the identity of the successful project leaders. Scholars believe that the difference between a good and poor project is its leadership. As argued by (Chen, M. T., 1997)

³ Sommerville, James, Craig, Nigel, and Hendry, Julie. (2010). The role of the project manager: all things to all people?. Emerald Group publishing limited. Vol. 28.

successful project leaders must possess the required skills, knowledge, and perform the right roles in order to satisfy the major areas of project success mentioned above which are the main responsibility of the project leaders that need to be delivered by carrying on the six key roles of project leaders. These six key roles are: leader, spokesperson, monitor, liaison, entrepreneur, and resource allocator that were defined by the Managerial Work Survey developed by (McCall M. and Segrist, C. 1980) as an instrument to assess project leader's roles based upon the Mintzberg framework which investigated the influences of functional specialty and hierarchical level on the managerial roles. As Mintzberg argued, "though all managers perform all of the broad roles in his model, they are not played equally or proportionately, with factors such as position level, type of job, and organizational type size influencing which roles are dominant and which are minimal"⁴. These roles are also going to be examined thoroughly in this study through examining the project leaders of Kuwait Institute for Scientific Research (KISR).

In this study project leaders' roles is assessed and examined to find the relationship between the major six project leader's roles introduced by Mintzberg and the performance of projects at Kuwait Institute for Scientific Research (KISR) using McCall and Segrist survey. In this paper, the project leader's opinions will be examined and closely studied to identify which role is the most significant as well as the most insignificant one that can be attributed to the success of the project.

⁴ McInnis, W. (2002). Running head: CBO Managerial roles the managerial roles of North Carolina community college chief business officer.

2. <u>Background of Kuwait Institute For Scientific Research (KISR)</u>

Being one of the important research institutes in Kuwait intensifies the responsibilities assigned to Kuwait Institute for Scientific Research (KISR). These responsibilities are represented in conducting research studies in five major natural and energetic resources in Kuwait: Petroleum, water, food, environment, and techno economic resources that are all handled by skilled and qualified researchers and project leaders. The journey of KISR started in 1967 when the concession agreement obligates the Arabian Oil Company to establish a research institute in Kuwait to ensure continuous research activities in the most important natural and industrial areas that are essentials in leveraging the national economy of Kuwait⁵. Not to mention the important role of KISR in preparing the next coming generation to carry on the scientific researches and to increase the awareness among them about the importance of such activities in maintaining, developing, and preserving Kuwait's invaluable resources.

The nature of the work environment in research divisions that is filled with ongoing projects which are conducted under KISR's umbrella, forms the perfect population to conduct a survey to gather the data needed for this study from practiced project leaders with extensive experience. Project leaders at KISR direct and control all the aspects of the project (financial, personnel, material, etc.) during the different phases of the project life cycle starting from the conceptualization, planning, execution, and to termination phase that were the basis in the study conducted by (Dyett, V., 2011) which aimed to examined

⁵ History. *Kuwait Institute for Scientific Research*. Retrieved June 5, 2012 from http://www.kisr.edu.kw/Default.aspx?pageId=29&mid=14

the factors affecting the project success across the project life cycle. This fact illustrates that KISR's project leaders are eligible to be utilized by conducting the Managerial Work Survey.

3. Literature review

3.1 Assessing project leader competencies and skills:

In the past few decades, many studies were conducted to assess the relationship between project and the competencies of the project leaders and whether there is a direct effect on the successfulness of the project or not.

(Azim, S., Gale, A., Lawlor-Wright, T., Kirkham, R., Khan, A., Alam, M., 2010) found that managing people is the strongest factor that might influence project complexity which is why soft skills where found as important as the technical skills. (Ralph L, K., 1991), (Brown, K. And Hyer, N., 2010) and (Ahmed, S., 2011) identifies the six essential and intersecting soft skills that the successful project leader should possess and thus achieve project success. These six essential skills are: communication, competence with technical project management tools, team motivation, decision making, stakeholder influence, and conflict management. This argument is consistent with the findings of a study conducted by (Odusami, K., 2002) that found that decision making, communication, and leadership and motivation skills are the most important skills needed for an effective project leader. (McHenry, R., 2008) conducted a study to analyze the key competencies and skills as perceived by project leaders that are highly correlated with successful projects. The skills examined in this study were hard or technical skills along with non-technical or soft skills which are communication, conflict resolution, decision making, delegation,

management support, motivation, negotiation, organizational, organizational political, problem solving, team building, and basic computer skills. The results of the study found that there are perceived differences between competencies a project manager needs to be successful in different industries. Also, it found that there are differences between the importance of hard and soft skills and concluded that the technical skills are more important. Similarly, (Bourne, L. and Walker, D., 2004) and (Holmes, R. 2006) found that interpersonal, technical, and conceptual skills were important for leader development and former study argued that effective project manager should possess a third dimension skill called "tapping into the power grid" which is mainly about wisdom and know how that essential especially in large organizations.

(Thompson, D., 2009) examined the impact of the project leader competencies that was measured base on the nine knowledge areas that were developed by Project Management Institute (PMI) - on the performance of the project and identifies the top three knowledge areas that can be attributed to the success of the project as perceived by the experienced project managers. The nine knowledge areas examined in this study are: integration management, scope management, time management, cost management, quality management, human resource management, communication management, risk management, and procurement management. The finding of this study illustrates that the top three most important knowledge areas that would significantly contribute to the success of the project are: (1) scope management that ensure that the project includes all the work required, (2) communication management that is to promote effective communication between the project team members and key stakeholders of the project, (3) quality management includes all the activities of the performing organization that determine quality policies, objectives, and responsibilities so that the project will satisfy the needs for which it was undertaken.

(Oshinubi, O., 2007) conducted a study to measure the relationship between team performance and nine leadership styles that are performed by the project leader in the United States. The leadership styles or characteristics examined in this study are: (1) charisma, (2) sharing responsibility, (3) continuous personal and team development, (4) a common vision, (5) mutually influencing relationships, (6) putting the interests of the group ahead of the interests of the individual, (7) risk-taking, (8) team collaboration, and (9) empowering others. The finding of this study shows that the highest performance were found within teams who the leader exhibited four leadership characteristics which are continuous personal and team development, mutually influencing relationships, risk-taking, and team collaboration.

Similar to the purpose of the previous study, (Arnold, J., 2008), (Davis, A., 2008), and (Malone, S., 2009) studied the relationship between contemporary leadership styles of project leaders and project outcomes. (Arnold, J., 2008) conducted a study to examine the relationship between leadership styles and project success in the United States but the difference is that this study examined virtual projects instead of field project. The examined leadership styles are laissez-faire, transactional, and transformational styles. Laissez-faire includes styles that are related to decision making. Transactional style recognizes followers needs and satisfy them by incentives and rewards; it is also called exchange style because follower's performance is exchanged with rewards from the project leader. And finally transformational which is the leadership style that taps on innovation, personal growth and

building sense of team spirit to build self-motivated team to reach goals and objectives. The finding of this study shows that there is a significant correlation between leadership styles and project success and especially transformational style. (Davis, A., 2008) also used the three leadership styles that were used by (Arnold, J., 2008) which are laissez-faire, transactional, and transformational styles to examine the relationship between those styles and the outcome of projects. There were three measured outcomes; satisfaction with leader, perception of leadership effectiveness, and willingness to exert extra effort. The findings of this study are consistent with the findings of (Arnold, J., 2008) which illustrate that leadership styles have a significant relationship on project's outcomes. However, the findings of (Malone, S., 2009) study indicates that there was a positive significant relationship between transactional leadership and project success.

In addition, (Weems-Landingham, V., 2004) studied the role and the leadership behavior of project leaders that might affect the outcome or the performance of the project along with two additional factors; discovery and preparation and team potency. Project leader behavior refers to client partnering, managing expectations, delegating, escalating, seeking approval and guidance, and determining team member resources. While discovery and preparation behaviors refers to pre-work, planning, understanding objectives and understanding action. Team potency refers to members' confidence, competence, empathy, facilitation, and social presence. The result of the this study shows that project performance effectiveness is correlated with project leader's client partnering, and determining team member resources, while team member's responsiveness which is part of the social presence and their facilitations. (Dzameshie, D., 2012) is another study that aimed to identify the main managerial behaviors that lead to successful project performance. The examined managerial behaviors in study are classified into three main categories; task, relations, and change. These categories include twelve managerial behaviors: clarifying roles, monitoring operations, short-term planning, consulting, supporting, recognizing, developing, empowering, envisaging change, taking risks for change, encouraging innovative thinking, and external monitoring that were illustrated by successful project leaders. The finding of this shows that task and change behaviors were more emphasized by project leaders than relations.

Contrary to the previous findings, (Pomfret, D., 2008) conducted a study to find whether there is any relationship between project manager's leadership practices and the performance of the project and found that there is insignificant correlation between them and argues that there might be some relevancy between the two but not apparent in this study. Also, (Leblanc, D. 2008) found that there are no association between IT project manager's personality type and project success or failure.

3.2 Assessing project leader roles:

Many studies took the project managers roles as their main topic to discuss. Since 1980, when McCall and Segrist developed their survey instrument based upon the Mintzberg framework which measure the managerial roles, studies were conducted using this instrument to examine the relationship between these roles and project performance. The McCall and Segrist survey instrument's roles that are used in this study are: (1) Leader role: which include tasks as motivating, staffing, and training team members. (2) Liaison role: that is mainly about establishing a web of external contacts and relationships. (3) Monitor role: is to observe the information to understand the organization and the environment. (4) Spokesperson role: that is the communication of information and ideas. (5) Entrepreneur role: is to initiate, plan, and manage the changes on the project. (6) Resource allocator role: which is the responsibility of allocating financial, material, and other resources. There were four more roles in Mintzberg's framework (Figurehead, disseminator, disturbance handler, and negotiator) but they were omitted in McCall and Segrist instrument because they were correlated with the other six roles activities.

The results of the studies conducted using the McCall and Segrist's instrument vary which indicates there are differences in the importance of the managerial roles across functional areas and the importance of these roles depend heavily on the circumstances and conditions of the project. (Grover, V., Jeong, S., Kettinger, W. J., & Lee, C. C., 1993) found that the CIO places a greater emphases on the spokesperson role while the importance of each managerial roles changes through the maturity of the IS which more weight were consigned to leader and resource allocator roles at middle manager and when IS management matures more weight were allocated to spokesperson and liaison roles.

Meanwhile, (Lineman, J., 2005) found that among the six managerial role examined in the study, Entrepreneur role was ranked at the top of them in regard to their significance as perceived by managers in the top management. While on the other hand, the Liaison role was found to be the least effective one. Furthermore, (Sommerville, J., Craig, N., and Hendry, J., 2010) shows that that the number of managerial roles undertaken by a project manager is not constant and changes with age and also the nature of the roles undertaken moves with the maturity of the project manager. (Karlsen, J., Gottschalk, P., and Andersen, E. 2002) made a comparison study to investigate the difference between executives and project leaders in regard to their emphasis on the importance of the six managerial roles in Norway. The result of the study shows that executives emphasize on entrepreneur role over the roles while project leaders significantly emphasize on leader role over the other roles.

(Gottschalk, P. and Karlsen, J., 2005, 2006) examined those six roles in another two different studies, the first was on two types of projects; internal IT projects and outsourcing projects while the second was on outsourcing termination projects and outsourcing project. The results of the first study show that project leaders emphasize the importance of the managerial roles differently. The authors notice that leader role was found to be more emphasized in the internal projects while the spokesperson role was more emphasized in the outsourcing projects. Meanwhile the results of the second study showed that these roles were more important in outsourcing termination project than it is in outsourcing projects.

Another study took the Mintzberg's frame work to investigate the managerial roles performed by Chief Business Officers (CBO) to fulfill the community college's missions in North Carolina. This study was conducted by (McInnis, D., 2002) who believes that CBOs understanding and emphasis on the managerial roles affect tremendously on their performance and effectiveness toward achieving goals as leaders. For the purpose of identifying roles of CBO, a combination of Mintzberg frame work and Baker's model (based on the roles defined by Minzberg) were used to answer research questions. Baker's model categorized managerial roles into three categories; (1) leadership roles which include leader role, and liaison role. (2) Informational roles that include monitor role and spokesperson role. (3) Decisional roles which include entrepreneur role and resource allocator role. The finding of this study shows that task giver role which is part of the leadership role was the most significant role that affects CBO performance in leadership category and ambassador role was found the least affective one. Also, it was found that liaison role is performed as a regular, on-going part of the CBO's job and was emphasized by them. In regards to the informational roles, the importance of each role was inconsistent and varies depending on the position and the extent of experience. However, it was found that all CBOs were emphasizing on their role as clearing house of information, rules, and regulations. Also, it was found that monitoring CBO's own division's activities was a high priority, while spokesperson was found minimal. Finally, in regard to decisional roles it was found that the emphasis on each role vary depending on the situation but it was found that CBOs put greater importance on resource allocator and varying importance on entrepreneur role.

(Chen, M. T., 1997) demonstrate that a successful project leader must perform some roles to complete the project safely. These roles are motivator, coordinator, leader, and an integrator. (Dyett, V., 2011) conducted a comprehensive study to assess the roles and characteristics of a project leaders that play a part in achieving project success. This study took into consideration other factors which are organizational characteristics, project characteristics, and the project life cycle that might affect project success. The results of the study demonstrate that project manager's roles explained 18% of the project success. Two out of six examined managerial roles found to be significant variables to project success. These roles are monitor and resource allocator.

(Carson, J., 2006) conducted a study to examine the relationship between the leadership roles and the performance and outcomes of team members or in other words the team member's contribution to the team during the team's life cycle that extend from the beginning phase to the middle phase and finally to the end phase. The author believes that the leadership roles would either push the team towards greater level of success or to lower level of achievements. The four leadership roles examined in this study are: (1) navigator role which is the role that provides a clear direction to direct the team and to communicate the overall purpose in order to achieve the main goals and objectives. (2) Engineer role that is basically about structuring the team where the leader must facilitate, monitor, establish, and adjust each member's actions. (3) Social integrator role which is to develop and maintain an efficient social relationship between team's members through well-defined collaboration and communication between one another. (4) Liaison role that concerns with managing the team's external linkage through maintaining relationships with important external contacts and stakeholder. The result of the study shows that in general the four leadership roles have strong relationship with team contribution at the phases of the team's life cycle. The findings show that navigator role has different relationship with individual contribution where it found to be stronger during the middle and the end phase of the team's life than at the beginning of it. While engineer role where found to have stronger relationship at the middle of the team's life than it is at the beginning and at the end phases. Similarly, the social integrator role where found to has stronger relationship at the middle phase than at the beginning and at the end phases. And finally the liaison role was found to have insignificant relationship with individual contribution during all phases of the

team's life cycle. However, the finding illustrate that it has explained a small percentage of individual contribution at the middle of the team's life cycle.

Another study took six major roles of the project manager to assess which one best performed by the project leaders examined that was conducted by (Gudarzi, G. and Chegin, M., 2011). The roles investigated in this study are: (1) looking upward: that the role of sponsoring the project to achieve organizational commitment, (2) looking outwards: that is the role of meeting requirements to satisfy clients, (3) looking backward: the role of supervising the progress of the project, (4) looking forward: the role of planning to set realistic targets, (5) looking inward: the role of evaluating the project leader's own self and own performance to ensure that there is a positive effect on team, and finally (6) looking downward: the role of managing the team to maximize their contribution. The results of this study found that the most efficient role performed is looking downward while the least is looking outward.

3.3 Assessing project success:

In the simple project management, triple constraints were used to assess the successfulness of project which was meeting time, budget, and specifications. As defined in (Pinto, J., and Slevin, D., 1988) these triple constraints were used in many studies to examine the project performance.

Similarly, (the Standish group, 1995) at the chaos report did categorize projects based on these three dimensions. At this study project are classified into successful projects or type (1) which are projects that are completed on time, within budget, and as specified earlier, challenged project or type (2) which are projects that are completed and functional

but either over time, over budget, or even with different specifications as determined earlier, and finally impaired projects or type (3) that are projects which are either cancelled. (Bakhsheshi, A. and Nejad, S. 2011) used a more comprehensive method that introduce additional dimensions beside time, cost, and requirements which are quality, client satisfactions, and goal achievements.

(Shenhar, A., Levy, O., and Dvir, D., 1997) developed a comprehensive model that identifies the main dimensions that can be used to measure project success. These dimensions are design goal, impact on customer, benefit to organization, and preparing for future, and another dimension was introduced in 2007 which is impact on team.

(Dyett, V., 2011) conducted an integrated study to examine the relationship between organizational characteristics, project characteristics, project manager roles, the project life cycle, project manager characteristics and project success, as well as to examine the changes at roles performed as the project passes through the life cycle of the project. To measure project success, Shenhar's dimensions where used as the main attributes to assess the successfulness. The results of this study show that the project success is affected by project leader's roles, organizational characteristics, and project characteristics but no affected by project life cycle or project leaders attributes. Also, it found that project leaders' roles are not affected by the project life cycle.

4. <u>Methodology:</u>

The purpose of this study is to examine the roles of project leaders in achieving successful projects at Kuwait Institute for Scientific Research (KISR) and to identify the

significant role that can be correlated with the successfulness of the project as well as the insignificant one that has the least effect on it. For that purpose, this study will use managerial work survey developed by (McCall and Segrist, 1980) which assesses the six managerial functions of the project leaders: leader, liaison, monitor, spokesperson, entrepreneur, and resource allocator. While project success will be measured using a multidimensional framework developed by (Shenhar, A., Levy, O., and Dvir, D., 1997) which took into consideration four aspects of the project: Design goal, impact on customer, benefits to organization, and preparing for future. The impact to team was introduced to the instrument in 2007 but it will not be included in this study. What worth mentioning is that for practicality reasons both of the surveys were shortened. As regard to McCall and Segrist's managerial work survey, 12 questions were omitted, and Shenhar's multidimensional framework was condensed in which 15 questions were excluded.

4.1 Data collection:

For the purpose of identifying the most significant role that can be associated with the project success, a sample of employees were taken from KISR's research divisions to study their opinion regarding the importance of each role as seen by their perspective. The sample includes only research scientists who were actually directing projects as project leaders. The data has been derived from the questionnaires that were used in this study which ask respondent to rate the importance of each item of each role as well as to show their degree of agreement and disagreement of their most recent project (the questionnaire is attached in the appendix). And to maintain the validity of the responses, any incomplete questionnaire will be deleted from the collected questionnaires.

4.2 Research design:

This is a quantitative and an online survey research study which aims to examine the significance effect of each managerial role: leader, spokesperson, monitor, liaison, entrepreneur, and resource allocator on the success of the project. A web-based survey is used to collect data from the entire population of 170 project leaders in KISR who were or currently are working on projects.

The online survey instrument consists of three sections; the first section measures the demographic characteristic of the project leader which consists of 6 questions (the first question was used only to keep track of the respondents). The second section of the survey which extend from the 7th question to the 12th's, measures project leader's roles using the managerial work survey developed by (McCall and Segrist 1980). Respondents is asked to rate the importance of each item using a 5-point semantic differential scale with anchor ratings of 1= "not important" to 5= "very important". For the total scale, the score range is 34 to 170, where higher scale reflects a greater importance of the item. In this section, the 7th question measures leader role with 8 items, the 8th question measures spokesperson role with 5 items, the 9th question measures monitor role with 7 items, the 10th question measures liaison role with 6 items, the 11th question measures entrepreneur role with 3 items, and the 12th question measures resource allocator role with 5 items. The third and the last section measures project success using (Shenhar, A., Levy, O., and Dvir, D., 1997). Respondents is asked to specify the degree of agreeableness of each item using a 5-point likert scale with anchor ratings of 1= "strongly disagree" to 5= "strongly agree". For the total scale, the score range is 6 to 30, where higher scale reflects a higher level of overall

project success. A total of 6 items is listed in this section to measure design goal, impact on customers, benefit to organization, and preparing for future.

This study will use step-wise multiple regression analysis to test the hypotheses of this paper and to establish the relationship between the variables of the study. The independent variables will be the managerial roles while the project success will be the dependent one. The multiple regression model is given by the equation:

Project Success = $b0 + b1 X_{1i} + b2 X_{2i} + b3 X_{3i} + b4 X_{4i} + b5 X_{5i} + b6 X_{6i}$

Where:

Project success is the dependent variable

b0: Constant term

The independent variables are:

X1: Leader role

X2: Spokesperson role

X3: Monitor role

X4: Liaison role

X5: Entrepreneur role

X6: Resource allocator role

4.3 <u>Research question and Hypotheses:</u>

Countless of empirical studies have found that managers within different functional areas will place different importance on their managerial roles. For that reason, this study will examine the relationship between the managerial roles performed by project leaders at Kuwait Institute for Scientific Research (KISR) and the success of the project. The research question which this study aims to answer is: what is the managerial role that has the most significant effect on project success? Therefore, the research hypotheses of this study are

as follows:

 H_a1 : Leader role has a significant relationship with project success. H_a1 : Leader role has insignificant relationship with project success.

 H_a2 : Spokesperson role has a significant relationship with project success. H_a2 : Spokesperson role has insignificant relationship with project success.

 H_a3 : Monitor role has a significant relationship with project success. H_a3 : Monitor role has insignificant relationship with project success.

 H_a4 : Liaison role has a significant relationship with project success. H_a4 : Liaison role has insignificant relationship with project success.

 $H_{a}5$: Entrepreneur role has a significant relationship with project success. $H_{a}5$: Entrepreneur role has insignificant relationship with project success.

 $H_{a}6$: Resource allocator role has a significant relationship with project success. $H_{a}6$: Resource allocator role has insignificant relationship with project success.

5. <u>Results:</u>

This part of the paper will present and analyze the data collected from 97 project leaders at KISR who responded to the online questionnaire for the purpose of assessing project leader's roles in achieving successful project by evaluating the significance of the six managerial roles; leader, spokesperson, monitor, liaison, entrepreneur, and resource allocator. The data collected were analyzed using the Statistical Program for Social Science (SPSS). Additionally the demographic characteristics of the respondent project leaders are described in this part of the study which represents the first section of the questionnaire.

5.1 <u>General description of the sample demographics – first section of the</u> <u>questionnaire:</u>

The population of this study was 170 project leaders who did or currently are directing project conducted under KISR's umbrella. Of the 112 respondents, 97 of them were eligible to be used in this study while the 15 responses remaining were incomplete which make them ineligible for this study. Percentages of respondents by gender are: 26.8% female and 73.2% male.

What is your gender?		
Answer Options	Response Percent	Response Count
Female Male	26.8% 73.2%	26 71
an	swered question	97
	skipped question	0



Percentages of the academic qualifications of the project leaders are: 17.5% bachelor,

15.5% master, 67% PhD holders, and none of the respondents held diploma.

What is your academic qualification (the highest degree earned)?						
Answer Options	Response Percent	Response Count				
Diploma	0.0%	0				
Bachelor	17.5%	17				
Master	15.5%	15				
PhD	67.0%	65				
an	swered question	97				
٤	skipped question	0				



The majority of respondents received their highest degrees from engineering fields with a percentage of 50%, followed by science with a percentage of 40%, while the rest were from different fields in which 7 respondents skipped this question.

Which of the following best describes the field in which you received your highest degree?					
Answer Options	Response Percent	Response Count			
Mathematics	0.0%	0			
Science	40.0%	36			
Healthcare	0.0%	0			
Medicine	1.1%	1			
Computing	0.0%	0			
Engineering	50.0%	45			
Technology	7.8%	7			
Business	1.1%	1			
Other (please specify)		12			
ans	swered question	90			
s	kipped question	7			



In regards to the respondents' experience in leading projects, most of them had more than ten years with a percentage of 60.8% followed equally by project leaders who had experience from five to ten years and who had experience for less than five years with an equal percentage of 19.6% each.

For how long have you been leading projects?		
Answer Options	Response Percent	Response Count
Less than 5 years	19.6%	19
5 - 10 years	19.6%	19
More than 10 years	60.8%	59
an	swered question	97
3	skipped question	0



Concerning the last question of the first part of the survey which divides respondents into their division, the majority of respondents were from Environment & Urban Development Division with a percentage of 36.2%, followed by Food Resources & Marine Division with a percentage of 28.7%, while the rest were from the other divisions in which 3 respondents skipped this question.

Which division you currently work in?					
Answer Options	Response Percent	Response Count			
Food Resources & Marine	28.7%	27			
Water Resources	10.6%	10			
Petroleum Researches & Studies Center	18.1%	17			
Techno-Economics	6.4%	6			
Environment & Urban Development	36.2%	34			
a	nswered question	94			
	skipped question	3			



The cross tabulation between division and the length of total experience in leading project, it was found that the majority of respondents within Food Resources & Marine Division had more than 10 years of experience in leading project with a percentage of 70.4% while the minority had less than five years with percentage of 11.1%. The majority of respondents within Water Resources Division had more than 10 years of experience in leading project with a percentage of 70.0% while the minority had less than five years with percentage of 20.0% while the minority had less than five years with the minority had less than five ye

percentage of 10.0%. The majority of respondents within Petroleum Researches & Studies Center had equal respondents for both who had experience less than 5 years and experience from 5 to 10 years with a percentage of 35.3% for both while the minority had an experience more than 10 years with percentage of 29.4%. The majority of respondents within Techno Economics Division had more than 10 years of experience in leading project with a percentage of 83.3% while the minority had less than five years with percentage of 16.7% and none of the respondents had an experience from 5 to ten years. The majority of respondents within Environment & Urban Development Division had more than 10 years of experience in leading project with a percentage of 58.8% while the minority had an experience from 5 to 10 years with percentage of 17.6%. When a comparison is made between respondents among divisions in regards to their experience in leading projects, it was found that the majority of respondents with experience that extend for more than ten years were from Environment & Urban Development Division. The following table shows the numbers and percentages of each length of experience:

				For how long	For how long have you been leading projects?		
				Less than 5 years	5-10	More than 10 years	Total
Which division you	- I Food Resources &	Count		3	5	19	27
currently work in?	Marine	% within division you c work in?	Which currently	11.1%	18.5%	70.4%	100.0%
	Water Resources	Count		1	2	7	10
		% within division you c work in?	Which currently	10.0%	20.0%	70.0%	100.0%
	Petroleum Researches & Studies Center	Count % within	Which	6 35.3%	6 35.3%	5 29.4%	17 100.0%
		division you c work in?	urrently				
	Techno Economics	Count		1	0	5	6
		% within division you c work in?	Which currently	16.7%	.0%	83.3%	100.0%
	Environment &	Count		8	6	20	34
	Urban Development	% within division you c work in?	Which currently	23.5%	17.6%	58.8%	100.0%
Total		Count		19	19	56	94
		% within division you o work in?	Which currently	20.2%	20.2%	59.6%	100.0%

Cross tabulation between Divisions and Length of Experience

On the other hand, the cross tabulation between divisions and gender shows that the majority of respondents were male across all divisions. The highest male respondents were found within Environment and Urban Development with 79.4% which represents 27 male

respondents, while the lowest male respondents were found within Techno Economics Division with 66.7% which represents 4 male respondents. The following table shows the numbers and percentages of each gender across divisions:

						What is yo	What is your gender?	
						Female	Male	Total
Which division	you	Food	Resources	&	Count	11	16	27
currently work in?		Marine			% within Which division you currently work in?	40.7%	59.3%	100.0%
		Water R	lesources		Count	0	10	10
				% within Which division you currently work in?	.0%	100.0%	100.0%	
		Petroleu	ım Researche	es &	Count	4	13	17
Studies Center		% within Which division you currently work in?	23.5%	76.5%	100.0%			
		Techno	Economics		Count	2	4	6
					% within Which division you currently work in?	33.3%	66.7%	100.0%
		Environ	ment & Ur	ban	Count	7	27	34
		Develop	oment		% within Which division you currently work in?	20.6%	79.4%	100.0%
Total		-			Count	24	70	94
					% within Which division you currently work in?	25.5%	74.5%	100.0%

Cross tabulation between Divisions and Gender

5.2 <u>Descriptive analysis of the data collected - second section of the questionnaire:</u> 5.2.1: Question No. 7 assessing leader role:

For the first question of the second section of the questionnaire, respondents agreed more on the importance of the fifth point "Allocating manpower to specific jobs or tasks" with a mean of 4.62 and with the least standard deviation among the others that equals to .653. While on the other hand, respondent agreed less with the last point of this question "Giving negative feedback; criticize team members when appropriate" with a mean of 3.02 and with the highest standard deviation among the others that equals to 1.231. The following table shows the mean and the standard deviation for all the points of this question:

Role (1): Leader	Minimum	Maximum	Mean	Std. Deviation
 Integrating team members' goals with the project work requirements 	3	5	4.37	.666
 Keeping in touch with and help team members with personal problems 	1	5	3.75	1.061
- Resolving conflicts between team members	1	5	4.41	.760
 Keeping track of team members' special skills to facilitate personal growth 	3	5	4.29	.676
 Allocating manpower to specific jobs or tasks 	2	5	4.62	.653
- Using your authority to ensure that your team members accomplish tasks	1	5	4.52	.738
- Providing guidance to your team members on organizational issues	2	5	4.23	.771
- Giving negative feedback (criticize team members when appropriate)	1	5	3.02	1.231

5.2.2: Question No. 8 assessing spokesperson role:

For the second question of the second section of the questionnaire, respondents agreed more on the importance of the first point "Presiding at meetings as a representative of your project" with a mean of 4.31 and with a standard deviation equals to .755. While on the other hand, respondent agreed less with the last point of this question "Keeping other people informed about your project activities" with a mean of 3.67 and with the highest standard deviation among the others that equals to 1.007. The following table shows the mean and the standard deviation for all the points of this question:

Role (2): Spokesperson	Minimum	Maximum	Mean	Std. Deviation
- Presiding at meetings as a representative of your project	1	5	4.31	.755
- Serving as an expert to people outside of your project	1	5	3.88	.992
- Informing others of your project's future plan	2	5	3.78	.904
- Answering inquires on behalf of your project	2	5	4.24	.747
- Keeping other people informed about your projects activities	1	5	3.67	1.007

5.2.3: Question No. 9 assessing monitor role:

For the third question of the second section of the questionnaire, respondents agreed more on the importance of the fourth point "Keeping up with technological developments related to your projects" with a mean of 4.46 and with a standard deviation equals to .791. While on the other hand, respondents agreed less with the first point of this question "Assessing political events that may affect your project" with a mean of 3.01 and with the highest standard deviation among the others that equals to 1.186. The following table shows the mean and the standard deviation for all the points of this question:

Role (3): Monitor	Minimum	Maximum	Mean	Std. Deviation
 Assessing political events that may affect your project 	1	5	3.01	1.186
- Keeping up with market changes and trends that impact your project	1	5	3.75	1.118
- Keeping up with information on the progress of operations in the company	1	5	3.64	.926
- Keeping up with technological developments related to your projects	1	5	4.46	.791
- Gathering information about customers and competitors	1	5	3.85	1.054
- Learning about new ideas originating outside your project	1	5	4.24	.747
 Reading reports on activities in your own organization or other company 	1	5	3.63	1.059

5.2.4: Question No. 10 assessing liaison role:

For the fourth question of the second section of the questionnaire, respondents agreed more on the importance of the third point "Attending conferences or meetings to maintain your contacts" with a mean of 4.33 and with a standard deviation equals to .760. While on the other hand, respondent agreed less with the second point of this question "Attending social functions either to keep up your contacts or to represent your project" with a mean of 3.62 and with the highest standard deviation among the others that equals to 1.055. The following table shows the mean and the standard deviation for all the points of this question:

Role (4): Liaison	Minimum	Maximum	Mean	Std. Deviation
 Maintaining your personal network of contacts 	1	5	4.22	.819
- Attending social functions either to keep up your contacts or to represent your project	1	5	3.62	1.055
- Attending conferences or meetings to maintain your contacts	2	5	4.33	.760
- joining associations which might provide useful work-related contacts	2	5	4.02	.736
- developing new contacts by answering request for information	1	5	3.80	.799
- developing Personal relationships and contacts with 4 people outside your project	1	5	4.03	.918

5.2.5: Question No. 11 assessing entrepreneur role:

For the fifth question of the second section of the questionnaire, respondents agreed more on the importance of the last point "Solving problems by instituting needed changes on your project" with a mean of 4.23 and with the least standard deviation among others which equals to .797. While on the other hand, respondent agreed less with the second point of this question "Initiating controlled change on your project" with a mean of 4.08 and with a standard deviation that equals to .799. The following table shows the mean and the standard deviation for all the points of this question:

Role (5): Entrepreneur	Minimum	Maximum	Mean	Std. Deviation
- Planning and implementing changes	1	5	4.22	.807
 Initiating controlled change on your project 	1	5	4.08	.799
- Solving problems by instituting needed changes on your project	1	5	4.23	.797

5.2.6: Question No. 12 assessing resource allocator role:

For the sixth and the last question of the second section of the questionnaire, respondents agreed more on the importance of the last point "Allocating equipment or materials" with a mean of 4.61 and with a standard deviation equals to .638. While on the other hand, respondent agreed less with the first point of this question "Making decisions about time parameters on the project" with a mean of 4.44 and with a standard deviation that equals to .677. The following table shows the mean and the standard deviation for all the points of this question:

Role (6): Resource Allocator	Minimum	Maximum	Mean	Std. Deviation
- Making decisions about time parameters on the project	2	5	4.44	.677
- Preventing the loss of resources valued by your project	3	5	4.46	.646
- Allocating money within your project	3	5	4.53	.561
- Deciding for which tasks to provide resources	2	5	4.56	.629
- Allocating equipment or materials	2	5	4.61	.638

5.3 <u>Descriptive analysis of the data collected - third section of the questionnaire:</u>

5.3.1: Question No. 13 assessing project success:

For the set of questions that assess the project success, respondents agreed more with the third point "Satisfy customers and meet their requirements" with a mean of 4.55 and with the least standard deviation that equals to .629. While on the other hand, respondent agreed less with the second point of this question "Complete within or below budget" with a mean of 4.18 and with a standard deviation that equals to .854. The following table shows the mean and the standard deviation for all the points of this question:

Project Success at completion	Minimum	Maximum	Mean	Std. Deviation
- Complete on time or earlier	1	5	4.30	.937
- Complete within or below budget	1	5	4.18	.854
- Complete with all predetermined features and specifications	3	5	4.36	.648
- Satisfy customers and meet their requirements	3	5	4.55	.629
- Increase the organization's profitability or contribute to the organization's direct performance	2	5	4.26	.754
- Contribute to future projects (e.g. lead to additional new products or create new technologies for future)	2	5	4.44	.677

5.4 Demographic characteristics Vs. Managerial Roles:

In this part of the paper we will examine the difference (if any) between each demographic characteristic and the dependent and independent variables. First of all, to examine the difference importance emphasized by male and female in regards to each role performed, t-test analysis was conducted. The results of that test show that at 95% there is no significant difference between males and females in the roles performed since the Levene's test of each role (independent variables) is > .05. However, the test shows that there is a significant difference between male and females in regards to the project performance conducted by them the results shows that males achieve more successful projects than female since the mean of the dependent variable of male (4.4225) is higher than it is with females (4.1410). The following two tables show the results of t-test and the mean of project performance for male and female:

		Levene's Equal Varia	Test for lity of nces			t-tes	t for Equali	ty of Means		
									95% Col Interva Differ	nfidence I of the rence
		F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	Lower	Upper
X1	Equal variances assumed	3.218	.076	1.732	94	.087	.18817	.10866	02759	.40392
	Equal variances not assumed			2.135	66.882	.036	.18817	.08815	.01221	.36413
X2	Equal variances assumed	.297	.587	.016	95	.988	.00190	.12135	23902	.24282
	Equal variances not assumed			.015	41.799	.988	.00190	.12563	25167	.25546
ХЗ	Equal variances assumed	.916	.341	1.713	94	.090	.24882	.14529	03965	.53729
	Equal variances not assumed			1.950	59.443	.056	.24882	.12761	00648	.50412
X4	Equal variances assumed	3.111	.081	.445	95	.657	.06537	.14693	22632	.35705
	Equal variances not assumed			.488	54.000	.628	.06537	.13394	20316	.33390
X5	Equal variances assumed	.027	.871	1.112	95	.269	.18093	.16267	14201	.50388
	Equal variances not assumed			1.143	46.967	.259	.18093	.15829	13751	.49938
X6	Equal variances assumed	.442	.508	.982	95	.329	.11186	.11393	11431	.33804
	Equal variances not assumed			.964	43.071	.340	.11186	.11598	12203	.34576
Х7	Equal variances assumed	9.578	.003	-2.372	95	.020	28151	.11870	51716	04586

Independent Samples Test (Gender)

	Equal variances not assumed		-1.971	33.376	.057	28151	.14285	57202	.00900
			Group Statist	ics					
	- What is your gender?	Ν	Mean	Std. D	Deviation	Std. Er	ror Mean		
Х7	Female	26	4.1410		.67609	9	.13259		
	Male	71	4.4225		.44795	5	.05316		

Secondly, ANOVA was used to test whether there is any effect of education degree of respondents on the role emphasized. It was found that there are no significant differences among respondents with different academic qualification. The following ANOVA table shows the insignificance level which is >.05:

		Sum of Squares	df	Mean Square	F	Sig.
X1	Between Groups	.355	2	.177	.792	.456
	Within Groups	20.822	93	.224		
	Total	21.177	95			
X2	Between Groups	.041	2	.020	.072	.930
	Within Groups	26.585	94	.283		
	Total	26.625	96			
X3	Between Groups	.055	2	.027	.066	.936
	Within Groups	38.736	93	.417		
	Total	38.791	95			
X4	Between Groups	.620	2	.310	.757	.472
	Within Groups	38.490	94	.409		
	Total	39.110	96			
X5	Between Groups	1.806	2	.903	1.819	.168
	Within Groups	46.660	94	.496		
	Total	48.465	96			
X6	Between Groups	1.264	2	.632	2.648	.076
	Within Groups	22.439	94	.239		
	Total	23.704	96			
X7	Between Groups	.026	2	.013	.046	.955
	Within Groups	26.955	94	.287		
	Total	26.982	96			

ANOVA (Academic Qualification)

Descriptive (Academic Qualification)

-						95% Confide for N	ence Interval 1ean		
				Std.	Std.	Lower	Upper		
		Ν	Mean	Deviation	Error	Bound	Bound	Minimum	Maximum
DIM1	Bachelor	17	4.2132	.54980	.13334	3.9306	4.4959	2.88	5.00
	Master	15	4.2500	.41993	.10842	4.0175	4.4825	3.13	4.88
	PhD	64	4.1035	.46321	.05790	3.9878	4.2192	2.75	5.00
	Total	96	4.1458	.47214	.04819	4.0502	4.2415	2.75	5.00
DIM2	Bachelor	17	3.3333	.59219	.14363	3.0289	3.6378	2.33	4.17

	Master	15	3.2667	.45774	.11819	3.0132	3.5202	2.17	3.83
	PhD	65	3.3179	.53092	.06585	3.1864	3.4495	1.83	4.17
	Total	97	3.3127	.52664	.05347	3.2066	3.4189	1.83	4.17
DIM3	Bachelor	17	3.7647	.59749	.14491	3.4575	4.0719	2.43	4.57
	Master	15	3.8476	.41987	.10841	3.6151	4.0801	3.14	4.43
	PhD	64	3.8013	.69643	.08705	3.6274	3.9753	1.57	5.00
	Total	96	3.8021	.63900	.06522	3.6726	3.9316	1.57	5.00
DIM4	Bachelor	17	3.8725	.87506	.21223	3.4226	4.3225	1.83	5.00
	Master	15	3.9111	.44484	.11486	3.6648	4.1575	3.17	4.67
	PhD	65	4.0590	.60555	.07511	3.9089	4.2090	2.33	5.00
	Total	97	4.0034	.63828	.06481	3.8748	4.1321	1.83	5.00
DIM5	Bachelor	17	4.3137	.82891	.20104	3.8875	4.7399	2.33	5.00
	Master	15	4.4222	.38764	.10009	4.2076	4.6369	4.00	5.00
	PhD	65	4.0821	.72416	.08982	3.9026	4.2615	1.00	5.00
	Total	97	4.1753	.71052	.07214	4.0321	4.3185	1.00	5.00
DIM6	Bachelor	17	4.4706	.53679	.13019	4.1946	4.7466	3.50	5.00
	Master	15	4.8000	.28661	.07400	4.6413	4.9587	4.00	5.00
	PhD	65	4.4885	.51050	.06332	4.3620	4.6150	3.00	5.00
	Total	97	4.5335	.49690	.05045	4.4334	4.6337	3.00	5.00
DIM7	Bachelor	17	4.3627	.63255	.15342	4.0375	4.6880	2.67	5.00
	Master	15	4.3778	.54724	.14130	4.0747	4.6808	3.17	5.00
	PhD	65	4.3359	.50560	.06271	4.2106	4.4612	3.00	5.00
	Total	97	4.3471	.53015	.05383	4.2402	4.4539	2.67	5.00

Thirdly, to test whether the field of education has any impact on the role emphasized by respondents, ANOVA was also conducted. The results show that there is a significant difference only on the leader role (X1) performed by respondents since the sig. of .003<.05. It was found that people with science background appreciate the leader role more than any other field with a mean of 4.3893 while Engineering people were found the least people who do with a mean of 3.9528. The following two tables show the result:

		-				
		Sum of Squares	df	Mean Square	F	Sig.
X1	Between Groups	3.848	5	.770	3.998	.003
	Within Groups	17.329	90	.193		
	Total	21.177	95			
X2	Between Groups	.489	5	.098	.341	.887
	Within Groups	26.136	91	.287		
	Total	26.625	96			
ХЗ	Between Groups	2.134	5	.427	1.048	.395
	Within Groups	36.656	90	.407		
	Total	38.791	95			
X4	Between Groups	1.644	5	.329	.799	.553
	Within Groups	37.466	91	.412		
	Total	39.110	96			
X5	Between Groups	2.993	5	.599	1.198	.317
	Within Groups	45.472	91	.500		
	Total	48.465	96			
X6	Between Groups	.925	5	.185	.739	.596
	Within Groups	22.779	91	.250		
	Total	23.704	96			
X7	Between Groups	1.883	5	.377	1.365	.245
	Within Groups	25.099	91	.276		
	Total	26.982	96			

ANOVA (Field)

Descriptive (Field)

				Std.		95% Confider Me	nce Interval for ean		
		Ν	Mean	Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
X1	Science	35	4.3893	.42202	.07133	4.2443	4.5343	3.13	5.00
	Medicine	1	4.2500	-				4.25	4.25
	Engineering	45	3.9528	.48360	.07209	3.8075	4.0981	2.75	5.00
	Technology	7	4.1964	.32959	.12457	3.8916	4.5013	3.63	4.75
	Business	3	4.0000	.21651	.12500	3.4622	4.5378	3.75	4.13
	Other	5	4.1750	.24367	.10897	3.8724	4.4776	3.88	4.50

				i	i		Í		
	Total	96	4.1458	.47214	.04819	4.0502	4.2415	2.75	5.00
X2	Science	36	3.3750	.54827	.09138	3.1895	3.5605	2.00	4.17
	Medicine	1	3.1667					3.17	3.17
	Engineering	45	3.2704	.49274	.07345	3.1223	3.4184	2.00	4.17
	Technology	7	3.2381	.67259	.25422	2.6161	3.8601	1.83	3.83
	Business	3	3.5556	.58531	.33793	2.1016	5.0096	3.00	4.17
	Other	5	3.2333	.61914	.27689	2.4646	4.0021	2.17	3.67
	Total	97	3.3127	.52664	.05347	3.2066	3.4189	1.83	4.17
ХЗ	Science	36	3.9365	.57290	.09548	3.7427	4.1303	2.43	5.00
	Medicine	1	4.4286					4.43	4.43
	Engineering	45	3.6825	.61963	.09237	3.4964	3.8687	1.57	4.71
	Technology	6	3.9762	.66034	.26958	3.2832	4.6692	2.86	4.71
	Business	3	3.8095	.97241	.56142	1.3939	6.2251	2.71	4.57
	Other	5	3.5714	1.02519	.45848	2.2985	4.8444	2.14	4.71
	Total	96	3.8021	.63900	.06522	3.6726	3.9316	1.57	5.00
X4	Science	36	4.1343	.62971	.10495	3.9212	4.3473	2.83	5.00
	Medicine	1	4.0000					4.00	4.00
	Engineering	45	3.9556	.62503	.09317	3.7678	4.1433	1.83	5.00
	Technology	7	4.0238	.71640	.27077	3.3613	4.6864	2.50	4.67
	Business	3	3.7222	.25459	.14699	3.0898	4.3547	3.50	4.00
	Other	5	3.6333	.89287	.39930	2.5247	4.7420	2.33	4.83
	Total	97	4.0034	.63828	.06481	3.8748	4.1321	1.83	5.00
X5	Science	36	4.2407	.71541	.11924	3.9987	4.4828	2.00	5.00
	Medicine	1	5.0000					5.00	5.00
	Engineering	45	4.1852	.60534	.09024	4.0033	4.3671	2.33	5.00
	Technology	7	4.1905	.53945	.20389	3.6916	4.6894	3.33	5.00
	Business	3	4.0000	.33333	.19245	3.1720	4.8280	3.67	4.33
	Other	5	3.5333	1.53840	.68799	1.6232	5.4435	1.00	5.00
	Total	97	4.1753	.71052	.07214	4.0321	4.3185	1.00	5.00
X6	Science	36	4.6181	.42881	.07147	4.4730	4.7631	3.75	5.00
	Medicine	1	5.0000					5.00	5.00
	Engineering	45	4.4556	.52302	.07797	4.2984	4.6127	3.00	5.00
	Technology	7	4.6429	.31810	.12023	4.3487	4.9371	4.25	5.00
	Business	3	4.5000	.50000	.28868	3.2579	5.7421	4.00	5.00
	Other	5	4.4000	.89443	.40000	3.2894	5.5106	3.00	5.00

	Total	97	4.5335	.49690	.05045	4.4334	4.6337	3.00	5.00
X7	Science	36	4.4028	.56256	.09376	4.2124	4.5931	3.00	5.00
	Medicine	1	5.0000					5.00	5.00
	Engineering	45	4.2704	.50663	.07552	4.1182	4.4226	2.67	5.00
	Technology	7	4.5476	.36911	.13951	4.2062	4.8890	4.00	5.00
	Business	3	4.6667	.33333	.19245	3.8386	5.4947	4.33	5.00
	Other	5	4.0333	.64979	.29059	3.2265	4.8401	3.17	4.50
	Total	97	4.3471	.53015	.05383	4.2402	4.4539	2.67	5.00

Fourthly, ANOVA test shows that there is a difference between respondents with different length of experience in leading projects. The figures in the next table show that the length of experience affects the leader and the spokesperson roles performed by project leaders. Project leaders with more than 10 years were found to rate higher the importance of leader and spokesperson roles while respondents with experience extending from 5 to 10 years were found to rate lower the importance of these two roles. Here are the results:

		Sum of Squares	df	Mean Square	F	Sig.
X1	Between Groups	1.433	2	.717	3.375	.038
	Within Groups	19.744	93	.212		
	Total	21.177	95			
X2	Between Groups	3.189	2	1.594	6.395	.002
	Within Groups	23.436	94	.249		
	Total	26.625	96			
X3	Between Groups	.244	2	.122	.294	.746
	Within Groups	38.547	93	.414		
	Total	38.791	95			
X4	Between Groups	.336	2	.168	.407	.667
	Within Groups	38.774	94	.412		
	Total	39.110	96			
X5	Between Groups	.473	2	.236	.463	.631
	Within Groups	47.992	94	.511		
	Total	48.465	96			
X6	Between Groups	.051	2	.025	.101	.904
	Within Groups	23.653	94	.252		
	Total	23.704	96			
X7	Between Groups	1.087	2	.543	1.972	.145
	Within Groups	25.895	94	.275		
	Total	26.982	96			

ANOVA (Length of Experience)

								95% Confide	ence Interval Iean		
						Std	Std.	Lower	Upper		
				N	Mean	Deviation	Error	Bound	Bound	Minimum	Maximum
X1	Less	than	5	19	4.1316	.43196	.09910	3.9234	4.3398	2.88	4.63
	years										
	5-10			18	3.9028	.64960	.15311	3.5797	4.2258	2.75	5.00
	More years	than	10	59	4.2246	.39853	.05188	4.1207	4.3284	3.13	5.00
	Total			96	4.1458	.47214	.04819	4.0502	4.2415	2.75	5.00
X2	Less years	than	5	19	3.1140	.52720	.12095	2.8599	3.3681	2.00	4.00
	5-10			19	3.0614	.60911	.13974	2.7678	3.3550	1.83	3.83
	More years	than	10	59	3.4576	.45019	.05861	3.3403	3.5749	2.33	4.17
	Total			97	3.3127	.52664	.05347	3.2066	3.4189	1.83	4.17
Х3	Less years	than	5	19	3.7744	.57007	.13078	3.4997	4.0492	2.57	4.57
	5-10			19	3.7143	.73617	.16889	3.3595	4.0691	1.57	4.57
	More years	than	10	58	3.8399	.63442	.08330	3.6731	4.0067	2.14	5.00
	Total			96	3.8021	.63900	.06522	3.6726	3.9316	1.57	5.00
X4	Less years	than	5	19	3.8947	.68315	.15673	3.5655	4.2240	1.83	4.83
	5-10			19	3.9825	.67790	.15552	3.6557	4.3092	2.50	5.00
	More years	than	10	59	4.0452	.61730	.08037	3.8843	4.2061	2.33	5.00
	Total			97	4.0034	.63828	.06481	3.8748	4.1321	1.83	5.00
X5	Less years	than	5	19	4.0351	.80042	.18363	3.6493	4.4209	2.00	5.00
	5-10			19	4.2281	.56713	.13011	3.9547	4.5014	3.00	5.00
	More years	than	10	59	4.2034	.72719	.09467	4.0139	4.3929	1.00	5.00
	Total			97	4.1753	.71052	.07214	4.0321	4.3185	1.00	5.00

Descriptive (Length of Experience)

X6	Less	than	5	19	4.5132	.41226	.09458	4.3145	4.7119	3.75	5.00
	years									0	
	5-10			19	4.5789	.57767	.13253	4.3005	4.8574	3.00	5.00
	More	than	10	59	4.5254	.50150	.06529	4.3947	4.6561	3.00	5.00
	years										
	Total			97	4.5335	.49690	.05045	4.4334	4.6337	3.00	5.00
X7	Less	than	5	19	4.1404	.64373	.14768	3.8301	4.4506	2.67	5.00
	years										
	5-10			19	4.3421	.61733	.14162	4.0446	4.6396	3.17	5.00
	More	than	10	59	4.4153	.44676	.05816	4.2988	4.5317	3.33	5.00
	years						l.				
	Total			97	4.3471	.53015	.05383	4.2402	4.4539	2.67	5.00

Finally, the importance emphasized by each division to each role was examined also by conducting ANOVA test which shows that the leader, Monitor, Entrepreneur, and Resource Allocator roles are rated differently among divisions since the sig. <.05. Respondents within Food Resources and Marine Division did highly rate the importance of leader role with a mean of (4.3462) while the lowest rate was scored by Environment and Urban Division with a mean of (3.9706). In regards to the monitor role, also respondents within Food Resources and Marine Division did highly rate the importance of this role with a mean of (4.0440) while the lowest rate was scored by Techno Economics Division with a mean of (3.1190). Entrepreneur role was rate highly by respondents from Water Resources Division with a mean of (4.70) and rated the least by Techno Economics Division with a mean of (3.0556). And finally, resource allocator role was rated highly by respondents from Water Resources Division with a mean of (4.7500) and rated the least by respondents from Techno Economics Division with a mean of (4.0417). The following tables show the results:

		Sum of Squares	df	Mean Square	F	Sig.
X1	Between Groups	2.482	4	.621	2.945	.025
	Within Groups	18.547	88	.211		
	Total	21.030	92			
X2	Between Groups	.704	4	.176	.626	.645
	Within Groups	25.033	89	.281		
	Total	25.738	93			
X3	Between Groups	5.940	4	1.485	4.142	.004
	Within Groups	31.554	88	.359		
	Total	37.494	92			
X4	Between Groups	2.903	4	.726	1.896	.118
	Within Groups	34.062	89	.383		
	Total	36.965	93			
X5	Between Groups	10.408	4	2.602	6.441	.000
	Within Groups	35.951	89	.404		
	Total	46.359	93			
X6	Between Groups	2.868	4	.717	3.225	.016
	Within Groups	19.786	89	.222		
	Total	22.654	93			
X7	Between Groups	1.751	4	.438	1.564	.191
	Within Groups	24.919	89	.280		
	Total	26.671	93			

ANOVA (Divisions)

Descriptive (Division)

	-					95% Confidence Interval for Mean			
				Std.	Std.	Lower	Upper		Maximu
		Ν	Mean	Deviation	Error	Bound	Bound	Minimum	m
X1	Food Resources &	26	4.3462	.35410	.06944	4.2031	4.4892	3.63	5.00
	Marine								
	Water Resources	10	4.3250	.46098	.14577	3.9952	4.6548	3.75	5.00

	Petroleum Researches & Studies Center	17	4.0809	.47381	.11492	3.8373	4.3245	2.88	5.00
1	Techno Economics	6	4.1250	.30619	.12500	3.8037	4.4463	3.75	4.63
	Environment & Urban Development	34	3.9706	.53483	.09172	3.7840	4.1572	2.75	4.75
	Total	93	4.1438	.47810	.04958	4.0454	4.2423	2.75	5.00
X2	Food Resources & Marine	27	3.3333	.63043	.12133	3.0839	3.5827	1.83	4.17
	Water Resources	10	3.4833	.41164	.13017	3.1889	3.7778	2.83	4.17
	Petroleum	17	3.1765	.58769	.14254	2.8743	3.4786	2.00	3.83
	Researches & Studies Center								
	Techno Economics	6	3.3889	.52352	.21373	2.8395	3.9383	2.67	4.17
	Environment & Urban Development	34	3.2696	.43619	.07481	3.1174	3.4218	2.17	4.17
	Total	94	3.3014	.52607	.05426	3.1937	3.4092	1.83	4.17
ХЗ	Food Resources & Marine	26	4.0440	.49284	.09665	3.8449	4.2430	2.86	5.00
	Water Resources	10	3.9571	.39869	.12608	3.6719	4.2424	3.29	4.43
	Petroleum	17	3.8908	.65374	.15855	3.5546	4.2269	2.43	4.71
	Researches & Studies Center								
	Techno Economics	6	3.1190	1.02386	.41799	2.0446	4.1935	2.14	4.57
	Environment & Urban Development	34	3.6092	.60231	.10330	3.3991	3.8194	1.57	4.71
	Total	93	3.7880	.63839	.06620	3.6565	3.9195	1.57	5.00
X4	Food Resources & Marine	27	4.0802	.67205	.12934	3.8144	4.3461	2.50	5.00
	Water Resources	10	4.2500	.54575	.17258	3.8596	4.6404	3.33	5.00
	Petroleum Researches &	17	4.0686	.53379	.12946	3.7942	4.3431	3.17	4.83
	Studies Center								
1	Techno Economics	6	3.4722	.71815	.29318	2.7186	4.2259	2.33	4.33
1	Environment & Urban	34	3.8971	.61548	.10555	3.6823	4.1118	1.83	4.83
	Development								

	-								
	Total	94	3.9911	.63045	.06503	3.8620	4.1203	1.83	5.00
X5	Food Resources & Marine	27	4.1605	.71832	.13824	3.8763	4.4447	2.00	5.00
	Water Resources	10	4.7000	.36683	.11600	4.4376	4.9624	4.00	5.00
	Petroleum	17	4.0784	.47914	.11621	3.8321	4.3248	3.00	4.67
	Researches & Studies Center								
	Techno Economics	6	3.0556	1.23678	.50491	1.7576	4.3535	1.00	4.33
	Environment & Urban Development	34	4.2059	.55057	.09442	4.0138	4.3980	3.00	5.00
	Total	94	4.1489	.70604	.07282	4.0043	4.2935	1.00	5.00
X6	Food Resources & Marine	27	4.6759	.40320	.07760	4.5164	4.8354	4.00	5.00
	Water Resources	10	4.7500	.33333	.10541	4.5115	4.9885	4.00	5.00
	Petroleum	17	4.3824	.52379	.12704	4.1130	4.6517	3.00	5.00
	Researches & Studies Center								
	Techno Economics	6	4.0417	.67854	.27701	3.3296	4.7538	3.00	5.00
	Environment & Urban Development	34	4.5147	.48828	.08374	4.3443	4.6851	3.50	5.00
	Total	94	4.5319	.49355	.05091	4.4308	4.6330	3.00	5.00
Х7	Food Resources & Marine	27	4.4506	.55048	.10594	4.2329	4.6684	3.17	5.00
	Water Resources	10	4.6000	.52234	.16518	4.2263	4.9737	3.67	5.00
	Petroleum	17	4.3039	.47593	.11543	4.0592	4.5486	3.50	5.00
	Researches &								
	Studies Center								
	Techno Economics	6	4.0278	.84601	.34538	3.1399	4.9156	2.67	5.00
	Environment & Urban Development	34	4.2745	.47298	.08111	4.1095	4.4395	3.00	5.00
	Total	94	4.3493	.53552	.05523	4.2396	4.4590	2.67	5.00

5.5 <u>Reliability of data:</u>

To assess the items collected in this study formed a reliable scale, Cronpach alpha was computed. The alpha for the overall 40 item was 91.9 (greater than 0.7 which is the

minimum accepted figure), which indicate that the items has a good internal consistency. Similarly Cronpach alpha has been computed for each variable dimension separately and all variable dimensions have a result of alpha greater than 0.7, which indicate also that the data collected is a reliable data in each dimension.

Variables	Cronpach Alpha	No. Of Item
X1: Leader Role	70.1	8
X2: Spokesperson Role	75.6	5
X3: Monitor Role	76.4	7
X4: Liaison Role	84.1	6
X5: Entrepreneur Role	86.4	3
X6: Resource Allocator Role	83.6	5
Dependent V.: Project Success	79.1	6
Over All	91.9	40

5.6 <u>Results of Regression Analysis:</u>

5.6.1: Testing the correlation between variables:

To empirically investigate the effect of the factors that might affect project successfulness I will use multiple regression analysis, but before doing that I should carry out a correlation analysis. Correlation measures the association between two variables and quantities the strength of their relationship. The next table is the result of running this method. In this table we have 6 independent variables (managerial roles) that show the correlations between the dependent variable (project performance) against the independent variables. The finding of this correlation analysis shows that the correlation coefficient of project performance is comparatively strong with all of the managerial roles, because the p-value that represents the correlation is below 0.05. The type of correlation between the project success variable against the significant independent variable will be as follow:

- 1- The leader role performed by project leaders is positively correlated with project success with a percentage of 28%.
- 2- The spokesperson role performed by project leaders is positively correlated with project success with a percentage of 40%.
- 3- The monitor role performed by project leaders the is positively correlated with project success with a percentage of 36%.
- 4- The liaison role performed by project leaders is positively correlated with project success with a percentage of 31%.
- 5- The entrepreneur role performed by project leaders is positively correlated with project success with a percentage of 45%.
- 6- The resource allocator role performed by project leaders is positively correlated with project success with a percentage of 43%.

	Correlations											
	X1 X2 X3 X4 X5 X6 X7											
X1	Pearson Correlation	1										
	Sig. (2-tailed)											
	Ν	96										
X2	Pearson Correlation	.380**	1									
	Sig. (2-tailed)	.000										
	Ν	96	97									
Х3	Pearson Correlation	.444**	.431**	1								
	Sig. (2-tailed)	.000	.000									
	Ν	95	96	96								
X4	Pearson Correlation	.415**	.500**	.569**	1							
	Sig. (2-tailed)	.000	.000	.000								
	Ν	96	97	96	97							
X5	Pearson Correlation	.272**	.485**	.554**	.496**	1						
	Sig. (2-tailed)	.007	.000	.000	.000							
	Ν	96	97	96	97	97						
X6	Pearson Correlation	.325**	.358**	.472**	.357**	.554**	1					
	Sig. (2-tailed)	.001	.000	.000	.000	.000						
	Ν	96	97	96	97	97	97					
X7	Pearson Correlation	.282**	.403**	.358**	.312**	.453**	.428**	1				
	Sig. (2-tailed)	.005	.000	.000	.002	.000	.000					
	Ν	96	97	96	97	97	97	97				

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

5.6.2: Testing the normality distribution:

Depending on the Central Limit Theorem which states that using the means of all samples will reflects the mean of the whole population which eventually will follow a normal distribution. Moreover, according to (Ho, R., 2006), the distribution of data can be tested using the histogram to check the bell-curved distribution of data which is conducted in this paper. The result is shown in figure (1):

Histogram



Dependent Variable: DIM7

Mean =-3.16E-4 Std. Dev. =0.974 N =97

5.6.3: Regression Analysis:

In the next step, what we are going to do is to use the multiple regressions to look at the association of all of these 6 variables together to predict project successfulness. The multiple regression model is given by the equation:

Project Success = $b0 + b1 X_{1i} + b2 X_{2i} + b3 X_{3i} + b4 X_{4i} + b5 X_{5i} + b6 X_{6i}$

Where:

b0 is the constant term and b1 to b6 are the coefficients relating the independent variables to project success (dependent variable).

	Model Summary										
			Adjusted R	Std. Error of the							
Model	R	R Square	Square	Estimate							
3	.532°	.283	.259	.46025							

c. Predictors: (Constant), DIM5, DIM6, DIM2

The model Summary table above shows that the multiple correlation coefficient R is 0.532 and

the R^2 is 0.283, meaning that 28% of the variance of dependent variable dimensions can be

explained from the independent variable.

Mode	1	Sum of Squares	df	Mean Square	F	Sig.						
3	Regression	7.602	3	2.534	11.962	.000°						
	Residual	19.276	91	.212								
	Total	26.878	94									

c. Predictors: (Constant), X5, X6, X2

d. Dependent Variable: X7

			Coefficients			
		Unstandardize	ed Coefficients	Standardized Coefficients		
Model		В	Std. Error	Beta	t	Sig.
3	(Constant)	1.831	.459		3.992	.000
	X5	.163	.086	.217	1.886	.062
	X6	.248	.115	.231	2.146	.035
	X2	.215	.103	.214	2.095	.039

Coefficients

a. Dependent Variable: X7

The Coefficient Table above shows that t-value and the sig. opposite to each independent variable and indicates that those are the variables contribute to the dependent variable. By using level of significance 0.1 (90% confidence level) X5 will be included in the equation model. It shows also that X6 has a highest Standardized coefficient beta indicate that

the highest contribution to the dependent variable comes from X6 followed by X5 and X2 respectively.

Excluded Variables ^d						
					Partial	Collinearity Statistics
Model		Beta In	t	Sig.	Correlation	Tolerance
3	X1	.081°	.820	.414	.086	.813
	Х3	.054°	.486	.628	.051	.633
	X4	.016 ^c	.146	.884	.015	.666

c. Predictors in the Model: (Constant), X5, X6, X2

d. Dependent Variable: X7

The Excluded Variables table above shows that the sig. value of each variable dimension (sig>0.1) indicate the variable do not contribute to the dependent variable dimension when the all the 6 Dimensions entered together. Therefore, the final regression equation can derived from the previous tables as follows:

Project Success = 1.831 + 0.163*Entrepreneur Role + 0.248*Resource Allocator Role + 0.215*Spokesperson Role

5.7 <u>Findings:</u>

Hypothesis (1):

 H_a1 : Leader role has a significant relationship with project success. H_a1 : Leader role has insignificant relationship with project success.

Based on the results, the null hypothesis was rejected. It was hypothesized that leader role would be significantly associated with project success but the data did not support the hypothesis.

Hypothesis (2):

 H_a2 : Spokesperson role has a significant relationship with project success. H_a2 : Spokesperson role has insignificant relationship with project success.

Based on the results, the null hypothesis was accepted. It was hypothesized that spokesperson role would be significantly associated with project success and indeed the data did support the hypothesis.

Hypothesis (3):

 H_a3 : Monitor role has a significant relationship with project success. H_a3 : Monitor role has insignificant relationship with project success.

Based on the results, the null hypothesis was rejected. It was hypothesized that monitor role would be significantly associated with project success but the data did not support the hypothesis.

Hypothesis (4):

 H_a4 : Liaison role has a significant relationship with project success. H_a4 : Liaison role has insignificant relationship with project success.

Based on the results, the null hypothesis was rejected. It was hypothesized that liaison role would be significantly associated with project success but the data did not support the hypothesis.

Hypothesis (5):

 $H_{a}5$: Entrepreneur role has a significant relationship with project success. $H_{a}5$: Entrepreneur role has insignificant relationship with project success.

Based on the results, the null hypothesis was accepted. It was hypothesized that entrepreneur role would be significantly associated with project success and indeed the data did support the hypothesis.

Hypothesis (6):

 $H_{a}6$: Resource allocator role has a significant relationship with project success. $H_{a}6$: Resource allocator role has insignificant relationship with project success.

Based on the results, the null hypothesis was accepted. It was hypothesized that resource allocator role would be significantly associated with project success and indeed the data did support the hypothesis.

6. Conclusion:

It is clear that not all project leaders equally emphasize on managerial roles examined in this study. This study found that project success at KISR is attributed with three out of the six managerial roles examined in this study; spokesperson role, entrepreneur role, and resource allocator role, while leader role, monitor role, and liaison role were found to have insignificant relationship with project success. In other words, project managers who master these three managerial roles that were found to have significant relationship with project success are capable of achieving more successful project with 28% higher than other project leaders who do not emphasize on those roles.

One possible explanation for the diminished effect of leader role is because of the nature of the work environment at KISR which grants limited authorities to project leaders in regards to rewarding or penalizing team members for their performance. Also it might be because of the fact that KISR's employees are independent in regards to pursuing their personal growth as well as keeping up with organizational issues. Not to mention that KISR's workplace is regulated with rules and policies that are applied by Human Resource Division that regulate employees relations and conflicts which diminish the leader role of project leader as defined by Mintzberg. Even though leader role was found irrelevant to project success at KISR, it was proven in other studies (e.g. Dzameshie, D., 2012) that it has significant relationship with project success in other organizations.

Monitor role also found to have insignificant relationship with project success probably because of the nature of project undertaken at KISR. Projects executed under KISR's umbrella are characterized with scientific nature which diminishes the importance of assessing political events that might occur in its external environment. Also that scientific nature of projects adds the uniqueness trait of each project which undermines the need for assessing trends in the market. Moreover, the limited number of competitors at KISR's immediate environment weakens the monitor role of project leader.

In regards to the results founded in regards to the liaison role, it might be due to the irrelevancy of personal contacts or attending social events with how tasks are executed at KISR. KISR's work environment is characterized with defined and formal procedures which leave no room for personal effect.

The findings of this study agree with part of the finding s of (Dzameshie, D., 2012) and disagrees with the other part. Both studies is consistent with the fact that managing change or entrepreneur role is one of the main behaviors or skills that is associated with project success, but they contradict each other with the concluded idea regarding task behavior or leader role, in which it was found irrelevant in this study while (Dzameshie, D., 2012) found it to be essential behavior.

The finding of this study is also parallel with the findings of (Grover, V., Jeong, S., Kettinger, W. J., & Lee, C. C., 1993) in regards to the main managerial roles emphasized in the process of leading project which are spokesperson and resource allocator roles. Moreover, the finding of this study is consistent with the findings of (Lineman, J., 2005) and (Karlsen, J., Gottschalk, P., and Andersen, E. 2002) who concluded that the entrepreneur role is the main role and ranked the highest among the other roles which is supported by the regression result of this study that found that this role is the strongest effect on project performance.

Also the findings of this study along with the finding of (Karlsen, J., Gottschalk, P., and Andersen, E. 2002), (Gottschalk, P. and Karlsen, J., 2005) and (Sommerville, J., Craig, N., and Hendry, J., 2010) support the fact that some managerial roles are emphasized differently depending on the length of experience and maturity. (Grover, V., Jeong, S., Kettinger, W. J., & Lee, C. C., 1993) and this study found that spokesperson role was appreciated more by project leaders with experience more than 10 years or in other words matured project leaders highly weigh the importance of that role. This reality support the literature review of the fact that there are differences in the importance of the managerial roles across functional areas and the importance of these roles depend heavily on the circumstances and conditions of the project.

(Dzameshie, D., 2012), (Azim, S., Gale, A., Lawlor-Wright, T., Kirkham, R., Khan, A., Alam, M., 2010), (McHenry, R., 2008), (Arnold, J., 2008), (Davis, A., 2008), (Malone, S., 2009) and many other scholars clearly stated that project leader's skills and competencies are significantly related with the outcome or performance of projects. The findings of this study support that fact but not to a large extent though. The variables examined in this study were able to explain 28% of variance of project performance which means that there are other factors that might influence the successfulness of the project at KISR's environment other than the six managerial roles. However, the findings of this study contradict with the findings of (Pomfret, D., 2008) and (Leblanc, D. 2008) who did not found any significant relationship between project leader's leadership practices and project performance.

The in hand differences among the findings of all of the studies presented in this paper strengthen the argument of (McHenry, R., 2008) who argued that there are perceived

differences between competencies a project manager needs to be successful in different industries. From this study we can conclude that all of KISR's divisions complete projects with similar degree of successfulness or challenges probably because all of KISR's assets are available for all of the divisions equally (e.g. availability of budget, access to data and information, technical support, etc). However, it was found that males are completing successful project more than females despite of the fact that both males and females appreciate the six managerial roles similarly. In addition, when compared to other divisions, it was found that Water Resources Division's project leaders emphasize on the importance of entrepreneur and resource allocator roles, which are among the roles associated with project success, more than those in other divisions. Again, this reality demonstrates that there are other variables or factors that influence the performance of projects at KISR which at this point it is recommended to investigate and search for the other 72% percent of the variance that would explain the whole percentage of project performance.

7. Implications for practitioners:

This study provided the first empirical evidence that identify what managerial roles are correlated with project success at KISR. This evidence would help project managers with improving their performance and thus the performance of their projects. This study has several implications for practitioners that would improve their effectiveness in handling challenges and problems. From the results of this study, it can be recommended: (1) to involve the communications of information and ideas with the top management or during Project Review Meetings (PRMs), answers inquires regarding project, and to represent the project to other external parties because these attributes were found to have significant relationship with successful projects. (2) To initiate and design changes in case of obstructions whether these obstructions are expected on the project itself or among team members. (3) To efficiently allocate human, financial, materials, and any other resources to maximize project proficient performance.

8. Future Research:

This study was narrowly focused on one aspect of project success which is the application of the six managerial roles. It has been proven through this study that applying managerial roles alone is not enough to achieve successful projects. This study should be replicated to include other independent variables as (Dyett, V., 2011) who studied several factors: (1) organizational characteristics that include industry, culture style, size, and level of project management maturity, (2) project manager's profile that include age, tenure in current position, trainings, (3) project characteristics that include type, size of the team, budget, and durations. The key of replication is to incorporate other factors because this study reveals 28% of the variance of project success at KISR which means that there is 72% of unexplained variance. Not to mention the importance of incorporating more project leaders from different organizations to measure the impact of organizational characteristics on project success.

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