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The Relationship between Projects Management Managers' Competencies and Employees' Performance of Construction Industry at Gaza Strip

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Abstract: Projects managers' competencies are one of the factors that have the greatest impact on the employees' performance in construction projects. However, many construction companies appear to give insufficient attention to the issues related to improving the competencies of their project managers. This study investigated the relationship between projects managers' competencies and employees' performance under the setting of Gaza construction firms. It aims to identify the competencies required for the contractor's projects managers that contribute towards the employees' performance and exploring the most effective methods for developing the construction project manager competencies. A questionnaire survey was used. A total of 110 structured questionnaires were distributed targeting project managers, 94 valid questionnaires to be used for further discussions with a response rate of 85.5%. The results show that the employees' performance in construction projects is highly affected by the competences of the project manage. It is found that the top three measures of construction employees' performance according to its influence by the competencies of the project's managers are; 'productivity', 'compliance with work instructions' and 'working after regular working time'. Whereas to influence the employees' performance, the top three most important competencies needed for project manager were: 'communication skills', 'team management' and 'problem solving'. The best methods to develop the project manager's competencies are 'on-the job training', 'off-the job training' and 'Observing experienced others'.

Keywords: Construction industry, project manager, competencies, performance, employees, Gaza Srip

1. Introduction

Many construction projects continue to fail in spite of using the established project methods and techniques as the leadership and management competency required for successful project outcomes (Ekung and Ujene, 2014) . Inefficient traditional practices and skills of management team leads to ineffective management (Munns and Bjeirmi, 1996).

Project Manager (PM) is a position used in the construction industry and given to people carrying out many roles with a particular skill set for each role. The role of construction manager is currently seen as one of the hardest, most complex roles in construction industry. Construction projects managers can greatly influence the success of construction organizations (DuBois et al., 2015). However, the unique structure of the construction industry, coupled with the challenges of global competitiveness, and changing regulatory requirements have created great demand for

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highly educated and competence construction project managers (Omran et al., 2012). Davies (2001) said that construction project manager should be extremely having the strong character, knowledge, skills to achieve successful leadership and he must be proficient in all aspects of management, with qualities that ensure their survival and, ultimately success in the project.

On the other hand, human resources are considered as the key challenge that has a significant bearing on the industry in fulfilling construction demand. The performance of the human resources in construction is the main problem facing the industry which appears in many topics such as cost, time, quality, client satisfaction; productivity and safety (Thomas et al., 2004). In reality, employees' job performance reflects the organization's performance and its competitive advantage. Accordingly, Various steps have been taken by several construction companies to improve working performance of its employees in order to face the competitive market (Ibrahim et al., 2010). The way depend on the project managers' efficiency as they are responsible for leading the human resources and their responsibility in selecting, obtaining, distributing, organizing, and putting to use all of those resources that are necessary to pursue and achieve an organization's objectives (Olomolaiye et al., 1998). There are many problems affecting the construction labor performance which may cause project failure. The main reason for poor performance and development in construction companies is referred to poor management capabilities and procedures (Mamma & Omozokpia, 2014).

In Palestine, construction industry faces many problems relating to employee performance, which makes adopting new trends for management is necessity to overcome some of these problems. The understanding of the importance of relationship between project managers' competencies and the performance of the workers puts local construction organizations in the position to offer and practice recruitment and selection of projects managers in a professional way. Thus, identifying and improving the project managers key competencies that serving to enhance the employees' performance and the organizations capability need to be one of the priority considerations for study in construction sector of Gaza Strip.

Identifying key competencies of the project managers serving to enhance from the likelihood of construction project success is a subject in which little research has been done. Thus, this study sought to identify the critical competencies for project managers in construction industry in Gaza Strip.

The construction employees' performance is considered as one of the important elements to determine the success of the construction organization. This requires to understand the relationship between the project manager competencies and their employees' performance at the workplace to enhance employee performance. There is universal agreement that project manager's competencies have a significant impact on the project workers' performance. The effects of project manager competences on the employees' performance have received relatively little attention by past research. The available literature on the relationship between project managers' competencies and project employee performance is scant. This gap signifies the importance of this study to the profession of project management.

This study aims mainly to identify and strengthen the most important competencies of the projects managers in order to improve the performance of the construction workers in Gaza Strip. To achieve the proposed aim, the study set out the following objectives to be achieved: Explore the relationship between the project manager's competencies and his employees' performance, Identify the most important competencies of the project manager in affecting the workers performance, determine the most important methods to improve the competencies of the local construction project managers.

1.1 Manager Competency

There are two prominent approaches to competencies: functional-analytical and personal characteristics (Boyatzis et al., 2007). However, Crawford (2005) proposed three classifications of competencies: Input competencies refer to the knowledge and skills that a person brings to a job, Personal competencies are the core attributes underlying a person's capability to execute a job, Output competencies relate to the ''demonstrable'' performance that a person exhibits at the workplace.

Another categorization considered as classic one for competencies legacy conceptual framework. This framework stated that the use of each of the skills varies with the level of management responsibility, who divided competencies into three types, as follows: Technical competencies, Human competencies and Conceptual competencies (Maddy et al., 2002).

1.2 Soft and Hard Competency

Laker and Powell (2011) considered hard skills as technical skills, while soft skills place emphasis on personal behavior and are seen as intrapersonal and interpersonal skills. Traditionally, in order to be effective in a job, it is essential for an individual to possess both hard and soft competencies at a threshold level and use these together in performing their tasks adequately (Omisore, 2013).

On the other hand, the construction industry remains one of the most labor-intensive project-based industries in Gaza Strip, and contributes significantly to the local economy. The project-based nature of the industry has resulted in diverse groups of people, with often very different characteristics, interests, priorities and goals. To successfully manage and coordinate these competing individual interests and goals with those of central to the project, it is essential

that construction project managers possess required soft skills. This study focuses on soft competencies as relationships with project team members which are considered critical to the project manager success. In addition, the purpose of this study is to contribute to the discussion by reporting the results of the impact of project managers' soft competencies on construction employees' performance in construction sector of Gaza Strip. The researcher has taken a broad view of project manager's soft competencies including personal, social and behavioral competencies, that most successful project managers should be willing to attain and develop, in special, those soft competencies that may have direct impact on the employees' performance.

1.3 Construction Project Manager Competencies

Egeland (2010) wished-for several soft skills needed for project manager to perform various roles assigned to him. These skills include the following: Stress handling skills, Problem solving skills, Communication skills, Interpersonal skills, Management skills, Presentation skills and Leadership skills.

Dziekoński (2017) assumed the key construction project manager's competency areas including knowledge, management skills and attitude. Crawford (2005) suggested an integrated model of competence for construction projects managers which consists of performance and personality dimensions and knowledge and skills. On the other hand, Omran et al. (2012) have outlined the concept of construction manager competency which consists of personal characteristics, attitudes, knowledge competence and skills competence.

Trivellas and Drimoussis (2010) demonstrated that behavioral competences are a vital requirement for project managers to deal with different team members. ICB – IPMA (2006) recommended 15 behavioral competence elements in PM practice, which are relevant to the profession of project management and in the context of the project. These behavioral competency elements are: Communication, Conflict resolution, Leadership, Self-control, Engagement, Assertiveness, Relaxation, Openness, Creativity, Efficiency, Results orientation, Consultation, Negotiations, Conflict and crisis, Reliability, Values appreciation and Ethics.

Accordingly, this study is only focused upon the soft competencies and not the hard competencies. The hard competencies are found not to be as relevant for this study since the research is about improving the project team performance on the base of the internal relationships in the local construction companies.

In this study, major concepts are considered similar when examining the literature. These are: human, social, interpersonal, personal, people competencies. These competencies groups are demonstrated in the way the project manager perceives and recognizes the attitudes of his superiors, equals, subordinates and the way he accordingly behaves. Technical skills and hard skills also have similar meaning. Therefore, this study may conclude that soft skills of construction managers and connecting and making personal bonds with the team members should be absolutely in the highest interest of local construction management studies.

1.4 Construction Employees' Performance

Despite development in the project management technology, workers are still the key players in the construction projects. They are individuals who bring their own perspectives, values and attributes to organizational life, and when managed effectively can bring considerable benefits to organizations (Mullins, 1999). The enclosure of a behavioral element to definitions of performance has been furthered by the work of Borman and Motowidlo (1993). His classification of performance components includes two types of performance: Contextual performance and Task performance. Contextual performance is defined as performance that is not formally required as part of the job but that helps shape the social and psychological context of the organization (Borman & Motowidlo, 1993).

1.5 Relationship between Project Manager's Competencies and Employee Performance

Several studies verified that the project manager's competencies effect on employee performance and can be considered as a critical success factor for any project as it contributing to organizational performance. It is clear that the success and failure of any project mainly depends on competencies of the project manager who is considered to be the key contributor to the success of any project, as well as provide a guide to the team members to achieve highest performance and the client satisfaction (Rahman et al., 2007). For any project to be successful, there has to be a good project manager who is able to provide leadership and bring together different teams to work towards a common objective. It is critical to hire a project manager who are technically talented, and has effective competencies. While these requisite competences are not easily quantified, to a large degree these intangible assets determine the employees' performance, and hence, the success or failure of the construction project.

1.6 Project Manager's Competency Development

Managers at all the levels have to input their efforts and make maximum use of their abilities to achieve project objectives. However, there are many expectations from managers working for an organization. These expectations are sometimes fulfilled but in some situations these managers may be running to their boss for guidance. Therefore, the

managers competencies must be developed so that they can think and work on their own and fulfill their responsibilities innovatively, while understanding and foreseeing the market and business situations. Therefore, identifying and developing project manager's competency is becoming more and more important in a today competitive market.
Cartwright (2008) argued that selecting the best development method will require some analysis as it can be done in a number of ways and it may depend on a number of aspects, such as available resources, cost, and time. PMI (2013) suggested several methods of competencies development including: mentoring, peer-to-peer, role playing, on-the-job training, coaching, group training, in-house training, CBT (computer-based training), individual training, PMI-sponsored programs, public education and conferences.

2. Methodology

A Desk study "literature review", structured interview and field survey including questionnaire approach was conducted in this research to achieve the indicated objectives. The results of the literature review and the conducted interviews that are in the line with this research objective was used to develop the study questionnaire. Before the main survey is launched, a pilot study was conducted to ensure the clarity and relevance of the questions of this study. The pilot study involved decision makers in construction sector in Gaza strip. The Statistical Package for Social Science (SPSS) was used to analyze the data in the collected questionnaires. Analysis results was used to accomplish this study objectives.

The target population for this research was all experienced managers who have been working in construction contracting companies from the first three classes which working in Gaza Strip and have valid registration till the end of May 2017 according to the Palestinian Contractors Union (PCU) records (202 companies). The sample size for this study equals to 86. However, 110 questionnaires were distributed.

3. Results and Discussion

3.1 Characteristics of Respondents

The results in Table 1 show that there are only two project managers (2.1%) whose specialization is mechanical engineering. However, 4 representing 4.3% are electrical engineers and 17 representing 18.1% were architectural engineers while 71 representing 75.5% were civil engineers. This finding consistent with the Palestinians engineers syndicate records. Civil engineers represent the majority of the engineers registered in Gaza Strip. Architectural engineers occupy the second rank in terms of the number of engineers registered in the Palestinians engineers syndicate. In addition, successful construction projects need an engineer who has knowledge of construction basics and methods, which makes the local construction companies to appoint civil engineers to manage its projects. Furthermore, the type of construction work performed by the companies participating in the survey covered a wide variety of construction work. From all works involved in construction projects, electrical and mechanical engineers usually perform only the works related to their education specialization. This direct the local construction companies to avoid appointing a project manager for its projects with mechanical and electrical engineering background.

Table 1 divides the respondents based on their experience in the construction industry. Most of them (57.4%) had between 10- and 15-years' experience, while 21.3% of the respondents had experience in construction more than 15 years. This result demonstrates that for any engineer to attain a project manager position in construction generally have to accumulate at least 10 years working-experience. Additionally, it is notable that the majority of the respondents come from a quite experienced group of engineers with experience more than 10 years, which signifies the remarkable experiences on which the results to this study survey were based.

The number of projects that were managed by each respondent revealed that, 47 projects managers representing 50% have managed a number less than five projects since becoming a project manager. Also, 43 respondents representing 45.7% have managed from five to ten projects during their works as projects manager. It is worth noting that, the size of the works in any projects reflecting the importance of this project. So that, the number of the project managed by any project manager doesn't reflect alone his experience. However, the respondents had a good familiarity with construction project management through the substantial number of projects that they managed over the years.

Table 1 - Characteristics of respondents

Respondent's information	Categories	Frequency	Percentage %
Respondents' specialization in engineering	Civil engineer	71	75.5
	Architectural engineer	17	18.1
	Electrical engineer	4	4.3
	Mechanical engineer	2	2.1
	Others	0	0
Respondents' years of experience in construction field	Less than 5 years	2	2.1
	(5 – Less than10 years)	18	19.1
	(10 – Less than 15 years)	54	57.4
	15 years and above	20	21.3
Number of projects have been managed by the respondent since becoming a project manager	Less than 5 projects	47	50
	(5 – 10 projects)	43	45.7
	More than 10 projects	4	4.3

3.2 Relationship between Project Manager Competencies and Workers Performance

Data in Table 2 below, depicts the analysis results for employee performance measures according to their strength of the relationship with the project managers' competencies. The standard deviation values in Table 2 for each one of the measures is less than (1). Thus, it can be said that there is some agreement between local construction projects managers about existing relationship for each one of these employee performances measures with the project manager competencies. One sample t-test results discussion below can provide possible reasons why obtaining this result.

On sample t-test was performed to validate respondents' perceptions about the degree of influence of the project's manager competencies on every one of the employees' performance measures. This test checks if the mean of each one performance measure differs from a specific value known as the hypothesized value and equals 3 for five points scales. In addition, this test was conducted at a confidence interval equals to 95%. Two kinds of hypotheses for the two-tailed one sample t-test, the null hypothesis and the alternative hypothesis. The null hypothesis (H0) assumes that the difference between the true mean (μ) and the hypothesized value (3) is equal to zero. The two-tailed alternative hypothesis (H1) assumes that the difference between the true mean (μ) and the hypothesized value (3) is not equal to zero. The two-tailed critical t-value equals to 1.99 for a degree of freedom equals to 93 [Number of the respondents (94) minus 1]. However, Table (II) points out that the p-value for each performance measure is less than 0.05 and t-values are larger than the critical value (1.99). So that, p-value is statistically significant and the null hypothesis can be rejected which revealed that the sample mean is significantly different from the hypothesized value (3). Furthermore, t-values for each measure are positive which indicated that, the mean of population from which the sample is taken is larger than the hypothesized value significantly different from the specified value.

As a result of the mentioned findings for the one sample t-test, it can be concluded that, the respondents agree that each employees' performance measure affected by the project manager competencies in local construction sector. Dainty et al. (2003) reported that while project manager's competences represent only one of many criteria upon which employees' performance is dependent, it is also considered as the most significant because it is people, and not processes and systems, that deliver projects (Cooke-Davies, 2001).

Table 2 explained that, "Productivity" with (M=4.33, RII=86.60, SD=0.71 and p-value=0.00) is ranked in the first position of the employees' performance measures affected by the project manager's competencies and indicating a strong agreement that this is the first measure affected by project manager's competencies. It is not surprising to get this result because many local construction organizations now recognize that employees' productivity reflects their efficiency and effectiveness and produced as a result of the other indicators. In addition, employees' productivity is a quantitative indicator that can easily be measured by physical output of the workers per unit of time.

This result is endorsed by Gayatri & Saurabh (2013) who explained that the quantitative indicators of performance measurement are the most commonly accepted and used. This result also is acknowledged by Dainty et al. (2005) who suppose that a combination of the construction project managers' competencies can engender effective teamwork and then more outcomes will be achieved. As a concluding remark, team members of the construction projects in Gaza Strip who have a competent project manager are more likely to perform at their best, so that their productivity will be enhanced.

Table 2 - Project manager's competencies influence on employees' performance

Performance measure	Mean	RII	SD	t-value	p-value	Rank
Productivity	4.33	86.60	0.71	18.18	0.00	1
Compliance with work instructions	4.27	85.32	0.75	16.36	0.00	2
Working after regular working time	4.13	82.55	0.79	13.79	0.00	3
Commitment to team working & cooperation between employees	4.07	81.49	0.92	11.34	0.00	4
Commitment to work attendance times	4.02	80.43	0.80	12.33	0.00	5
Work quality	3.98	79.57	0.80	11.82	0.00	6
Number of absence days	3.94	78.72	0.84	10.81	0.00	7
Compliance safety & health rules & procedures	3.87	77.45	0.82	10.32	0.00	8
Number of reported accidents & work injuries	3.90	78.09	0.88	9.95	0.00	9
Total	4.06	81.20	0.47	21.90	0.00	

In the second position of the performance measures affected by project managers' competencies is "Compliance with work instructions" with (M=4.27, RII=85.32, SD=0.75 and p-value=0.00). This is a logic result, especially when employees love their project manager then they will carefully follow his instructions and standard work processes to perform assigned tasks. In fact, the main factor of the good or bad relationship between the project manager and his staff is the competencies of the project manager, especially the interpersonal competencies.

In the last position of the involved employees' performance measures is "Number of reported accidents & work injuries" with (M=3.90, RII=78.09, SD=0.88 and p-value=0.00). However, regardless of its late ranking among the other performance measures, it is highly influenced by the manager's competencies according to its statistics. The last ranking, according to the respondents' perspective, may be obtained because there are multiple factor affecting the safety in work site other than the project managers' competencies, especially the technical factors. Therefore, this result argues that construction project manager competencies in the contracting companies working in Gaza Strip ultimately influence the employees' safety performance by influencing the reported accidents & work injuries in work site. In this line, Sunindijo et al. (2017) revealed that construction industry has a reputation as being one of the most dangerous industrial sectors, with accident, injuries and fatality rates being constantly much higher than the all-industry average.

Furthermore, the fact that the overall standard deviation (SD=0.47) is less than 1.0 indicates that there is little variability in the data and respondents significantly agree to each item that can be affected by project manager's competencies. Therefore, it is important to improve the skills of the project management personnel to improve employees' performance on construction sites. Additionally, construction organizations have to exercise their project managers competencies to ensure that all site activities are performed in a proper manner. These results are consistent with Abu Shaban (2008) findings, which concluded that, leadership skills for project manager is one of the most important factors affecting the performance of Gaza strip construction projects.

3.3 The Most Important Project Manager's Competencies

It can be seen that the rating of the competencies of the project manager reveals the high-scoring because the mean and RII values ranged from 3.47 (RII=69.36%) up to 4.46 (RII=89.15%). The overall mean rating of 4.03 and RII of 80.60% reflects a high level of support for the importance of the involved competencies in affecting the employees' performance.

Table 3 shows that all competencies under consideration are significant since all with a significance level "p-value" less than 0.05 at 95% confidence interval. In addition, all competencies have a positive t-value and larger than the critical value (1.99), which pointing out that all competencies have a mean value larger than the hypothesized mean (3) corresponding to the values in Table 3. This result indicating that there is a strong agreement between the respondents about the importance of these competencies to be provided in the construction project manager, so that, the employees' performance will be improved. Additionally, this result reveals that all competencies involved in study are significant

in affecting the construction employees' performance. Moreover, standard deviations for all competencies less than 1.0 which indicates that there is a consistent agreement between the respondents emerged from the little variability in the data obtained from the filled valid questionnaires.

To conclude, it is found that the evidence that construction project's managers should possess a combination of different competencies to be effective in managing a group of employees. These competencies help them to manage each individual employee and coordinate among several employees.

The competencies involved in Table 3 have been ranked according to their relative importance index (RII) values, the three most important competencies for construction projects simultaneously are communication skills team management and altruism.

The "communication skills" competency with (M=4.46, RII=89.15%, SD=0.60 and p-value=0.00) was ranked as the first most important competency that construction project managers in Gaza Strip required to improve their employees' performance. This is consistent with Humphrey and Stokes' (2000) survey, in which more than 83% of survey respondents identified communication as the most important skill.

Project managers spend most of their time communicating. They hold meetings; develop reports (writing as well as orally) to the, donors, beneficiaries or senior management; they listen to issues; solve problems; provide direction and constantly negotiate for resources. Project managers' success depends greatly on their ability to communicate.

The inference to be drawn is that, communication skills remain constant as a desirable and critical competency for construction project managers working in the contracting companies in Gaza Strip in order to develop the employees' performance. This result conforms with the finding of the study carried out by Krahn and Hartment (2006) as they found that verbal communication and listening were rated by experts in the top 10 of lists of 50 competencies important for project managers to be successful in leading their employees for best performance. This result is also supported by Dulewicz and Higgs (2005). Gather information from project staff and other people involved with the project considered as the first one of three functions of the project managers in the role as communicators.

Table 3 - Project manager's competencies that influence employees' performance

Project manager's competencies	Mean	RII	SD	t-value	p-value	Rank
Communication skills	4.46	89.15	0.60	23.60	0.00	1
Team management	4.43	88.51	0.56	24.76	0.00	2
Problem Solving	4.40	88.09	0.66	20.60	0.00	3
Decision Making	4.38	87.66	0.69	19.45	0.00	4
Empathy	4.33	86.60	0.71	18.18	0.00	5
Sociability	4.33	86.60	0.75	17.11	0.00	6
Leadership	4.30	85.96	0.79	15.98	0.00	7
Altruism	4.29	85.74	0.73	17.15	0.00	8
Coordination	4.29	85.74	0.80	15.64	0.00	9
Motivational skills	4.29	85.74	0.74	16.81	0.00	10
Flexibility	4.26	85.11	0.87	14.04	0.00	11
Accessibility	4.24	84.89	0.74	16.24	0.00	12
Cheerfulness	4.21	84.26	0.77	15.19	0.00	13
Influence	4.20	84.04	0.77	15.13	0.00	14
Modesty	4.17	83.40	0.77	14.72	0.00	15
Delegation	4.12	82.34	0.77	13.99	0.00	16
Planning	4.09	81.70	0.74	14.16	0.00	17
Initiative	4.09	81.70	0.85	12.37	0.00	18
Self confidence	4.04	80.85	0.82	12.40	0.00	19
Trust	4.01	80.21	0.78	12.52	0.00	20
Promotes the employees' development	3.98	79.57	0.75	12.70	0.00	21
Conceptual thinking	3.95	78.94	0.79	11.55	0.00	22
Negotiation	3.93	78.51	0.78	11.51	0.00	23
Organizing	3.90	78.09	0.87	10.10	0.00	24
Persistence	3.89	77.87	0.74	11.71	0.00	25
Adaptability	3.85	77.02	0.79	10.46	0.00	26
Credibility	3.82	76.38	0.80	9.89	0.00	27
Evaluation	3.78	75.53	0.86	8.79	0.00	28
Persuasiveness	3.73	74.68	0.79	8.98	0.00	29
Time management	3.70	74.04	0.83	8.23	0.00	30
Risk taking	3.68	73.62	0.75	8.79	0.00	31

Creativity	3.65	72.98	0.86	7.28	0.00	32
Morality	3.63	72.55	0.83	7.34	0.00	33
Ability to deal with stress	3.57	71.49	0.77	7.24	0.00	34
Monitoring	3.53	70.64	0.86	5.97	0.00	35
Respect for policies	3.47	69.36	0.83	5.50	0.00	36
Total	4.03	80.60	0.30	33.53	0.00	

The statistical results of team management competency shown in Table 3 with (M=4.43, RII=88.51%, SD=0.56 and p-value=0.00) put it in the second position from all competencies needed for construction project manager to improve his employees' performance. This finding is supported by the study of Patanakul et al. (2004) which found that the competency ‘team management’ is one of competencies that have been ranked in the highest position for project managers to lead in new product development. In addition, it is also argued that promoting teamwork in construction sites to work cooperatively with others will influence the team to perform in a desirable manner. Lampel (2001) explains that a project manager is effective when he/she is able to manage relations with team members and steers them to perform their tasks.

The third most important competency required to be provided in construction project manager is "problem solving" with (M=4.40, RII=88.09%, SD=0.66 and p-value=0.00). Clearly, the increased number of difficulties and complexities faced by construction projects in Gaza Strip reflected the high importance of the "problem solving" competency (Enshassi et al., 2009).

Generally, construction projects' problems are not regular among similar project every time which could lie outside those usually encountered thus project manager need to be prepared with innovative approach for problem solving. Problems can’t be solved as what it seems rather project manager have to be more analytical and conceptual in thinking (Dainty et al., 2004).

On the other side, examination of Table 3 shows that the lowest ranked competency is "Respect for policies" and "Monitoring others" had the second lowest ranking and the third lowest ranked competency is " Ability to deal with stress". However, although these competencies were ranked lower overall, they could be construed as important in effecting on employees' performance because all had mean ratings greater than 3.0. The statistics for "Respect for policies" marked by the project managers are (M=3.47, RII=69.36%, SD=0.83 and p-value=0.00) put this competency in the latest position of the involved competencies.

The results for this competency element show that project managers believe that this competency is moderately important for project managers to enhance the employees' performance. This competency reflects the project manager's ability to see and appreciate the value of conducting business affairs according to the intent of the state, industry and company policies and standards. However, the late position of this competency can be attributed to the respondents' understandings that respect for the policies often reflects the relationship between the project manager and his top management.

3.4 Project Manger's Competencies Development Methods

According to the previous discussion it can be argued that there is a link between project managers’ competencies and the employees' performance in construction industry. In addition, today's complex and unpredictable projects need sophisticated systems of project management and highly competent project managers. Since changing workplace environment has affected the workplace, improving significantly employees’ skills and knowledge to meet the rapidly environment changes have become a significant issue in organizational development

Generally, it is important for projects managers to constantly update their knowledge and understanding within their own fields. Table 4 demonstrates the evaluation of the most effective methods to develop managerial competence. The mean values for all development approach are more than 3 which could be argued that more developmental approaches should be adopted to enhance the project manager's skills in local construction sector. On the other hand, the standard deviation values for two development methods are larger than 1. These methods are "Case study" with SD=1.24 and "Conferences/Seminars" with SD=1.04. This means that there was some variability between the respondents' answers about the effectiveness of these two methods in developing the project managers' competencies in local construction sector. Additionally, p-values for these two methods are larger than 0.05, which indicates that the respondents are not agreed about the importance of these two methods in developing the projects mangers' competencies.

According to the statistical results shown in Table 4, it can be concluded that the respondents considered training method, both on-job and off-job training methods, as the most effective methods in developing the projects manager's competencies in local construction sector. Clearly, from the different project managers competencies development methods included in this study, "On the job training" method with (M=4.30, RII=85.96%, SD=0.76 and p-value=0.00) and the method "Off-the job training" with (M=4.18, RII=83.61%, SD=0.82 and p-value=0.00) have been ranked in the first and second positions, respectively. The statistical results of these two methods reflecting strong agreement between the respondents that such that approaches may be ideal in developing local construction project managers.

In the line with result, Zheng et al. (2006) stated that more competent management staff and skilled managers will be found in organizations that provide more training. Oribabor (2000) submitted that training and development aim at developing competences such as technical, human, conceptual and managerial for the furtherance of individual and organization growth.

Furthermore, donors, the Palestinian Authority (PA), and UNRWA have recognized that many of the managers suffer from managerial weaknesses, and training is one of the long-term keys to promote the development of small and micro-enterprises and alleviate the problem of persistent unemployment in the Palestinian Territories (Al-Madhoun & Analoui, 2002).

Complete theoretical knowledge and investigating new and innovative ideas are the main results of off-job training on the project managers competencies. However, this is one of the costly training methods. It includes choice of the place of training, arrangement of facilities for the employees, hiring experts to impart the training (Engetou, 2017). On the majority, training is considered as the process of improving the existing competencies, knowledge, exposure, and abilities of the construction project manager in local contracting companies working in construction sector.

Table 4 - The most influential methods for project manager's competency development

Competencies development method	Mean	RII	SD	t-value	p-value	Rank
On-the job training	4.30	85.96	0.76	16.57	0.00	1
Off-the job training	4.18	83.62	0.82	14.03	0.00	2
Observing experienced others	4.06	81.28	0.79	13.10	0.00	3
Computer-Based training	3.96	79.15	0.85	10.87	0.00	4
Role playing	3.83	76.60	0.77	10.44	0.00	5
Coaching	3.78	75.53	1.05	7.18	0.00	6
Mentoring	3.72	74.47	0.80	8.82	0.00	7
Focused workplace discussions	3.61	72.13	0.78	7.55	0.00	8
Meetings	3.49	69.79	0.81	5.83	0.00	9
Workshops	3.41	68.30	0.83	4.82	0.00	10
Networking	3.34	66.81	0.92	3.58	0.00	11
Case study	3.27	65.32	1.24	2.08	0.04	12
Conferences/Seminars	3.19	63.83	1.04	1.79	0.08	13
Read professional magazines or journals	3.17	63.40	0.84	2.01	0.04	14
Simulations and presentations	3.06	61.28	0.77	0.80	0.43	15
Total	3.62	72.40	0.29	20.90	0.00	

Moreover, the more on-job and off-job training delivered to construction project managers, the more competent they are to undertake their tasks and the more skills and abilities they have to perform those tasks effectively and the best performance taken from employees. Based on the mentioned findings, it is essential for project managers in construction industry to be involved in training in order to keep their competencies and knowledge up to date. These results also show that there is a growing realization by contracting companies in the construction industry of how important training programs are for upgrading the competencies and knowledge of its project managers and workforce as a whole.

Additionally, "Simulations and presentations" method with (M=3.06, RII=61.28%, SD=0.77 and p-value=0.43). The results of the inferential statistics for this method indicate that local construction managers considered simulation and presentation methods are insignificant in developing the project manager competencies. The late position of this method caused as a result of many reasons. For example, people who give seminars and lectures often have different realities. Additionally, simulation modeling is often employed on large complex problems because of its ability to capture complex interactions that are often impossible to model through other analytical techniques.

4. Testing of Hypothesis

Independent samples T-test and One-way analysis of variance (ANOVA) analysis were conducted to investigate the effect of different population characteristics on their views toward the main subjects of this study survey by comparing the significant association with each section of this study. The main sections investigated here, are:

1. Influence of the employees' performance by the project manager's competencies.
2. The most important competencies for construction project manager.
3. The most effective methods for project manager's competencies development.

4.1 Hypothesis Testing based on Respondent's Specialization in Engineering

1. The null hypothesis (Ho): There are no statistically differences at 0.05 level of significance among different respondents' engineering specializations about their perception toward the influence of the project manager's competencies on employees' performance.

2. The null hypothesis (Ho): There are no statistically differences at 0.05 level of significance among different respondents' engineering specializations about their perception toward the most important competencies for construction project manager.

3. The null hypothesis (Ho): There are no statistically differences at 0.05 level of significance among different respondents' engineering specializations about their perception toward the most effective method for project manager's competencies development.

Table (5) shows that, the calculated F- value for each subject is smaller than the critical F-value that equals to (2.71) for 3o and 90 o degrees of freedom and the p-value is larger than the significance level of 0.05. So that the above three null hypotheses can't be rejected. Accordingly, it can be stated that, specialization of the construction projects managers in engineering fields doesn't affect their perceptions toward the influence of the project manager's competencies on the employees' performance and about their perception toward the most important competencies for construction project manager and about their perception toward the most effective method for project manager's competencies development.

Table 5 - One-way ANOVA results based on the respondent's engineering specialization

Subject	Engineering specialization	N	Mean	SD	F-value	p-value
Influence of the project manager's competencies on employees' performance	Civil engineer	71	4.08	0.47	1.28	0.29
	Architectural engineer	17	4.01	0.48		
	Electrical engineer	4	4.08	0.31		
	Mechanical engineer	2	3.44	0.47		
	Total	94	4.06	0.47		
The most important competencies for construction project manager	Civil engineer	71	4.02	0.30	0.35	0.79
	Architectural engineer	17	4.09	0.32		
	Electrical engineer	4	3.99	0.16		
	Mechanical engineer	2	3.94	0.24		
	Total	94	4.03	0.30		
The most effective method for project manager's competencies development	Civil engineer	71	3.64	0.28	1.07	0.37
	Architectural engineer	17	3.64	0.30		
	Electrical engineer	4	3.40	0.28		
	Mechanical engineer	2	3.47	0.47		
	Total	94	3.62	0.29		

4.2 Hypothesis Testings based on Respondent's Experience in Construction Sector

The ANOVA test was used to determine if there is a statistically significant difference between the means of different respondents' experience in construction toward this study subjects. Three hypotheses were formulated to study the mentioned conclusion including the following;

4. The null hypothesis (Ho): There are no statistically differences at 0.05 level of significance among respondents from different years of experience in construction about their perception toward the influence of the project manager's competencies on employees' performance.

5. The null hypothesis (Ho): There are no statistically differences at 0.05 level of significance among respondents from different years of experience in construction about their perception toward the most important competencies for construction project manager.

6. The null hypothesis (Ho): There are no statistically differences at 0.05 level of significance among respondents from different years of experience in construction about their perception toward the most effective method for project manager's competencies development.

The ANOVA test in Table (6) revealed no significant differences between various groups of the respondents' years of experience in construction sector and this study subjects. In this line, the p-value for each is less than 0.05 and the calculated F-value is greater than critical value which is equal (2.71), for 3o and 90 o degrees of freedom. These results indicated that the stipulated three hypotheses above can therefore not be rejected. In conclusion, it can be recognized that construction managers experience in construction field doesn't affect their perceptions toward the influence of the project manager's competencies on the employees' performance and about their perception toward the most important competencies for construction project manager and about their perception toward the most effective method for project manager's competencies development.

Table 6 - One-way ANOVA Results based on the Respondent's Experience in Construction

Subject	Years of experience in construction filed	N	Mean	SD	F-value	p-value
Influence of the project manager's competencies on employees' performance	Less than 5 years	2	4.17	0.55	0.24	0.87
	From 5 to less than 10 years	18	4.04	0.63		
	From 10 to Less than 15 years	54	4.03	0.43		
	15 years and above	20	4.13	0.43		
	Total	94	4.06	0.47		
The most important competencies for construction project manager	Less than 5 years	2	4.11	0.31	0.69	0.56
	From 5 to less than 10 years	18	4.11	0.33		
	From 10 to Less than 15 years	54	4.00	0.26		
	15 years and above	20	4.03	0.36		
	Total	94	4.03	0.30		
The most effective method for project manager's competencies development	Less than 5 years	2	3.60	0.75	0.66	0.58
	From 5 to less than 10 years	18	3.69	0.26		
	From 10 to Less than 15 years	54	3.63	0.29		
	15 years and above	20	3.56	0.26		
	Total	94	3.62	0.29		

4.3 Hypothesis Tastings Based on The Number of Projects Have Been Managed by the Respondent

7. The null hypothesis (Ho): There are no statistically differences at 0.05 level of significance among the respondents about their perceptions toward the influence of the project manager's competencies on employees' performance due to the difference in the number of the projects managed by the respondents.

8. The null hypothesis (Ho): There are no statistically differences at 0.05 level of significance among the respondents about their perceptions toward the most important competencies for construction project manager due to the difference in the number of the projects managed by the respondents

9. The null hypothesis (Ho): There are no statistically differences at 0.05 level of significance among respondents about their perceptions toward the most the most effective method for project manager's competencies development due to the difference in the number of the projects managed by the respondents.

The findings in Table (7) below obtained from one-way ANOVA analysis that aims to exploring the effect of the difference in the number of the projects that managed by the project manager on their perceptions toward studied subjects. The calculated t-values for all studied subjects are less than the critical t-value (3.10) for 2o and 91odegrees of freedoms. Accordingly, the proposed three null hypotheses above can' be rejected. So that, it can be concluded that the number of the projects managed by the respondent doesn't affect his perceptions about the studied subjects including his perceptions about the influence of the project manager's competencies on the employees' performance and about their perception toward the most important competencies for construction project manager and about their perception toward the most effective method for project manager's competencies development.

Table 7 - One-way ANOVA based on the number of projects have been managed by the respondent

Subject	Number of projects	N	Mean	SD	F-value	p-value
Influence of the project manager's competencies on employees' performance	Less than 5 projects	47	4.10	0.52	0.39	0.68
	5 – 10 projects	43	4.02	0.42		
	More than 10 projects	4	3.94	0.23		
	Total	94	4.06	0.47		
The most important competencies for construction project manager	Less than 5 projects	47	4.05	0.31	0.28	0.76
	5 – 10 projects	43	4.01	0.28		
	More than 10 projects	4	3.98	0.32		
	Total	94	4.03	0.30		
The most effective method for project manager's competencies development	Less than 5 projects	47	3.63	0.28	1.94	0.15
	5 – 10 projects	43	3.64	0.29		
	More than 10 projects	4	3.35	0.31		
	Total	94	3.62	0.29		

5. Conclusion

The main objective of the research is to better understand key skills ad competencies of effective construction project manager that can affect the performance of the project employees. In this context, this study has been performed with regard to the impact that construction project manager's competencies will have on his employees' performance.

From an extensive review of the literature in construction projects management, the common measures of the employees' performance in construction have been identified. Then, the most important competencies of the construction project managers have been collected from different local and international researches. A comprehensive structured questionnaire has been built based on these data and filled by many construction projects managers working in the first three classes of the contracting companies in Gaza Strip. From the 110 distributed questionnaires, 101 have been collected and just 94 questionnaires found to be valid for further analysis. Descriptive and inferential analysis methods were used to analyse the collected data and the findings are then investigated and discussed in order to satisfy this research objectives.

The results rated “communication skills” as the most important competency because excellence in horizontal and vertical communication is required as this represents the voice of project manager. "Team management" and "Problem solving" have been ranked in the second and third positions, respectively, according to their importance for a project manager to enhance his employees' performance. In the same context, all competencies showed low levels of statistical deviation, indicating a wide range of agreement about their importance to successful employees' performance.

The hypothesis tests provided a relatively consistent view of the importance of the project manager competencies in enhancing his employee's performance regardless of the demographic characteristics of the respondents. This implies that all included project manager's competencies are important in enhancing their employees' performance.

In fact, the highly complicated and large construction projects need advanced systems of project management and highly competent project managers. In addition, the previous results of this study confirmed the impact of the project manager's competencies on the performance of his employees. So that, improving the project managers' competencies have become a significant issue in organizational development to meet the rapidly environment changes.

The first method in influencing the competencies of the project manager is "On-the job training" and the second on is "Off-the job training". These two results revealed that training both inside or outside the project site is considered as the process of improving the existing competencies, knowledge and abilities of the construction project manager in local contracting companies working in construction sector. Additionally, "Simulations and presentations" is the latest development method that can influence the project manager's competencies.

A successful construction manager must be a person with multiple competencies and abilities. As presented earlier, the relationship between the project managers’ competencies and the employees' performance was found to be strong which emphasizing the importance of the studied competencies to the enhancement of the employees' performance and then success of projects. The more competencies the construction manager has and use, the best performance from the employees will be obtained. So that, this will make a construction manager successful to satisfy the project success criteria, by completing the project within the required time and budget and to deliver the desired quality.

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