DEVELOPING COMPETENCY MODEL FOR THE PROJECT MANAGER IN THE LIBYAN CONSTRUCTION INDUSTRY

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Abstract

Managers are more likely to perform better or to stay longer in their position if their personal characteristics meet the requirements of the position. The importance of project manager's competency to construction derived from the nature of changing business circumstances of the industry. Developing the requisite competency on project manager is to ensure efficient performance that will bring to successful of a project. PEAKS framework was adapted and applied in order to determine the competency of the construction project managers within the Libyan construction industry. Two objectives which are following (i) to identify the construction project manager's perceptions on the level of importance of the competencies against their personality; and (ii) to determine the level of competencies of construction project managers were proposed to be achieved. Quantitative approach was implemented in this study whereby 50 questionnaires were sent out. However, of these, only 41 questionnaires were returned and analyzed. As result, it can be concluded that our project managers today are at the high level of competent.

Keyword: Competency, Project manager, Construction industry, Model, Libya.

1. Introduction

The unique structure of the construction industry, coupled with the challenges of global competitiveness, and changing regulatory requirements have created great demand for highly educated and competence construction project managers. The construction project managers have never had a tougher job. Companies are always in transition now remodeling and reorganizing to meet the latest global challenges. Competition is keen and only the flexible will survive. These business conditions translate directly to greater demand for efficient and effective management of an entire spectrum of projects.

Within such a changing construction project managers increasingly find themselves confronting with the new issues and undertaking additional roles have traditionally not been part of their responsibility. To ensure their continued relevance in the industry, construction project managers rely on various learning activities that help them to fulfill the needs of a project, both construction specific and non-construction specific functions. Identifying the routes and mechanisms by which these construction project managers acquires such requisite skills should provide in addressing the training needs of future construction project managers (Ryssell et al., 1997). Rater their management knowledge skill gains from their working experience, mostly

through real-estate or construction-related careers. Their role and responsibility in delivering the client s development needs directly reflects their application of the project management knowledge for their job competency in this industry. The project management competency refers to the capability to manage projects professionally by applying best practices with regards to the design of the project management process and the application of project management methods. Project management competencies require knowledge and experience in the subject, which enables the project to meet its deadlines and objectives (Garish and Huemann, 1999).

2. Defining Competence

According to the Cambridge Advanced Learner's Dictionary "competence is the ability to do something well". Among the many definitions provided by the Oxford English Dictionary, one with a similar meaning would be that competence is "sufficiency of qualification; capacity to deal adequately with a subject". Both definitions offer a general explanation which is quite representative of the common understanding of the word. However, as noted by Robothan and Jubb (1996) the concept has evolved incorporating different meanings, it has also become one of the most used terms in organizational literature. A good definition of competence is presented by Berglund (1999) in Glader (2001):

> *"Competence is used to accomplish something. It includes knowledge in all their shapes, but it also includes personality traits and abilities, such as social competence, persistence, stress tolerance and so on. Competence is at first an individual based term, but is however not impossible to also talk about organisational competence. One can then refer back to the complete competence at the individuals in the organisation, or the stored knowledge concerning systems, techniques or the culture".*

By analyzing this definition it can be understood that competence can be looked at from an individual perspective and also from an organizational point of view. In the organizational perspective the firm possesses competence as an institution. This perspective is presented by Söderlund's (2005), who looks at project competence in terms of organizational capability. In his view the organization is deemed to posses' project manager competence if it is able to generate/select and implement/execute projects in a skillful manner. These two different views are not contradicting, after all an organization is an inanimate character that exists only through its people. Therefore, for an organization to have competence, it is essential that the people inside are competent. Nevertheless, there is a difference on how competence is approached; one perspective looks at the individual parts and the other at the whole. For this study intends to look into the competences of project managers in the Libyan construction firms.

3. Project Management and Competency Theory

The importance of project managers leads to the concern of their training and development. As the first, step, and people need to know what constitutes a good project manager. Then proper training and development programs can be developed to provide the necessary training to those who want to become project managers.

Performance measurement of existing of project managers should also be developed in order to provide insight into the effectiveness of training program, as well areas that may need further development in the form of CPD. All of this can be embraced by the competency models. Edum-Fotwe and McCaffer (2000) stated that professional competency in project management is attained by the combination of knowledge acquired during training, its subsequent application and other skills developed in the course of practice. They notice that

although academic programmers cover a significant proportion of knowledge area, what required in practice by project manager is much wider in context. Thus, they suggest that modern project management demands other general and management knowledge, together with skills that extend beyond the technical aspects of traditional engineering areas.

4. Research Methodology

The target of this research is to determine the importance level of core competency of construction project managers and the level of competencies of the construction project managers within construction industry in the city of Murzeq (Libya). PEAKS model of project managers established by Hilson and Muray (2002) were selected. Basically, the paper is concentrated on four components which are categorized as Personal Characteristic, Attitudes, Knowledge Competence and Skills Competence (Figure 1). Relative Importance Index (RII) was used to determine the effectiveness of leadership needs for the project leader.

The most important factors influencing leadership needs was further analyzed using the 'relative importance index' as adopted by (Kometa et al., 1994). The 5 Likert scales was converted to relative importance index for each factor, which made it possible to cross-compare the relative importance of each of the factors as perceived by the respondents. The relative importance index was formulated using the following statistical expression (Lim & Alum, 1995):

$$\text{Relative importance index (RII)} = \frac{4n1 + 3n2 + 2n3 + 1n4 + 0n5}{4N}$$

$$(0 \leq \text{RII} \leq 1)$$

Where N = Total number of respondent, 4= highest weighted score (0, 1, 2, 3, 4) on scale of agreement (whereas n1 = number of respondents for Strongly Disagree, n2 = respondents for Disagree, n3 = respondents for Neutral, n4= respondents for Agree and n5 = respondents for Strongly Agree).

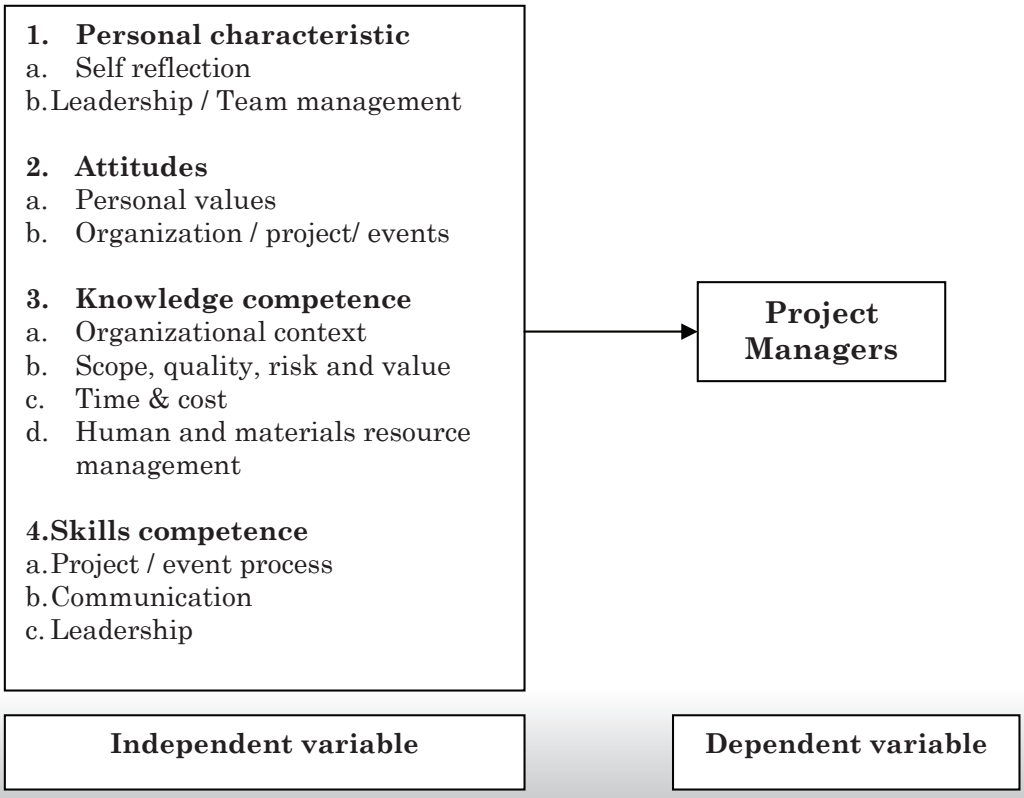

Figure 1 – Conceptual Framework of Project Management Competences

5. Results and Analysis

5.1 Respondents background

The analysis has shown that the presence of female in the industry is relatively less and their contribution of respondent (Figure 2). It can be said that the presence of female in the industry is relatively less and their contribution in this survey is only 19.5% if compare to the male respondent is 80.5%.

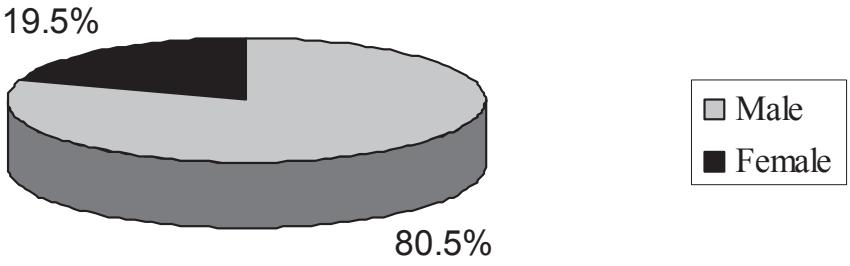

Figure 2 – Distribution of Respondent's Gender

From the data collection, most of the respondents are middle age project manager. The maturity age of respondent will give a better and more consistent results due to their exposure is much more compare to the young age of project manager. It was found from the analysis that the highest percentage of 51.2% who were aged between (30-40 years old), followed by the eldest aged ground between (41-50 years old) with 31.7%. Figure 3 shows the rest of the results

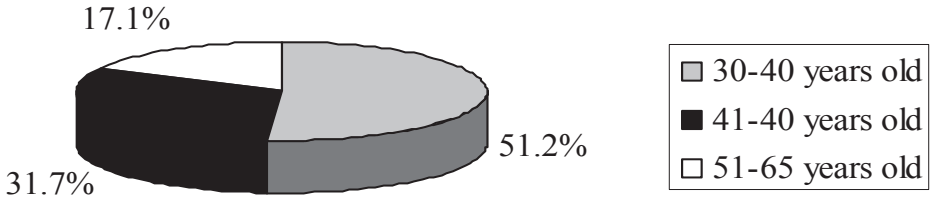

Figure 3 – Distribution of Respondent's Age

With regard to the educational background, it can be seen in Figure (6), most of the respondents were obtained Bachelor degree (33.6%). And twenty fifth percent are holding (25.1%) High diploma degrees, followed by 22.9% as Master holders. Other respondents with different holding degrees are shown in Figure (4).

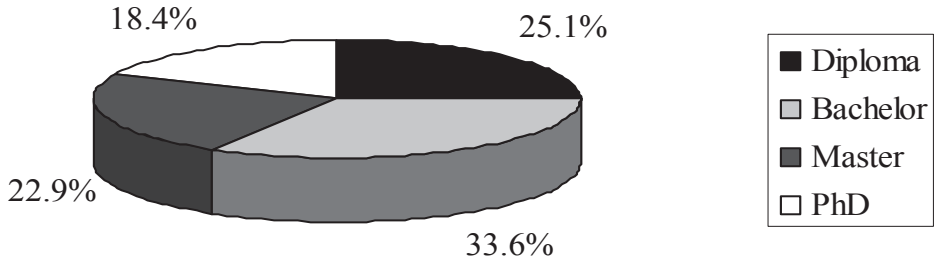

Figure 4 – Respondent's Education Qualification

As per job description / position, it can be seen from the data analysis that managing director represented 41.5% of the total, follow by Project Director 22%, others (Site Manager, project Engineer) achieve of 10% (See Table 1).

Table 1 – Respondent's Job description / position

Job Description	Frequency (%)
Project Director	9 (22%)
Senior Project Manager	5 (12.2%)
Managing Director	17 (41.5%)
Others	10 (24.4%)
	100%

In term of the working experience, Table 2 depicts the years of experience accumulated by the respondents in the construction industry. The data reveals that their years of experience ranged from 1 to 5 are predominant of the respondents. The subsequence percentage is follow by 31.7%, being 6 to 10 years experience in the construction industry.

Table 2 – Respondent's years of experience

Years of Experience	Frequency (%)
1 to 5	16 (39%)
6 to 10	13 (31.7%)
11 to 15	7 (17.1%)
More than 16	5 (12.2%)
	100%

From data shows in Table 3, it is clear that the number of current project handled by the project manager is ranged between 2-3 projects. There is also 17.1% of project managers had handled between 4-5 projects and similar percentage (17.1%) having more than 5 projects in the present position.

Table 3 – Numbers of current project under respondent's responsibility

Numbers of current project responsible for	Frequency (%)
1 Project	8 (19.5%)
2-3 project	19 (46.3%)
4-5 project	7 (17.1%)
More than 5 projects	7 (17.1%)
	100%

5.2 Personal Characteristic Competence Variables

Table 4 depicts the competency level for personal characteristic competence of our project manager in the Construction Industry in the city of Murzeq today. As can be seen, there are there are 2 competencies are considered under this section. These are a) Self reflection and b) Leadership/ team management. In the part A), the top priorities ranked factor was "Sustained energy & enthusiasm" as a factor number one (RII=0.682). This is followed by "Need to deliver

results/ achievement oriented" as the second ranked factor (RII=0.663). It is not surprisingly found that the factor "enjoys problems" was ranked as the last important factor in term of its priorities where RII was recorded as (0.292). The other ranked factors can be seen in Table (4). Part (b) in Table (4) shows the results for the personal characteristic competency on the leadership /team management. From the results, the highest ranked factor was "integrity" and it was recorded as (RII=0.663). This can be agreeable that this factor has been an ideal personal characteristic for our project manager today. The lowest ranked factor was "Seeks out face communication", where RII value was recorded as (0.595). Table 4 presents these results clearly.

Table 4 – Personal characteristics

Personal Characteristic	**RII**	**Ranking**
A. Self reflection		
Seeks out and is comfortable with change	0.429	11
Aptitude to uncertainty	0.526	8
Enjoys problems	0.292	12
At ease with prioritisation & decision making	0.585	7
Critical thinking	0.517	9
Need to be organized	0.595	6
Need to deliver results/ achievement oriented	0.663	2
Pragmatic	0.595	6
Self driven & tenacious	0.478	10
Self confidence	0.629	4
Sustained energy & enthusiasm	0.682	1
Self- controlled	0.604	5
Self- awareness & regulation	0.643	3
Leadership / Team Management		
Seeks out face communication	0.595	4
Charismatic & inspirational	0.629	2
Intuitive & sensitive to the needs of others	0.609	3
Adaptable	0.609	3
Integrity	0.663	1

5.3 Attitudes Competence Variables

Table 5 displays the statistic results of competency level for attitudes competence of our project manager today. There are total 2 constituents namely (i) personal values and (ii) organization/ project. From section (a), it can be seen that the factor "concern for ethical behavior/courteous" was ranked by the respondents as the top priorities factors amongst the listed factors for attitude competencies (RII=0.702). The other important factor was "team approach", this is ranked as the second factor (RII=0.678). Other important factors can be seen in Table (4). With refering to the section (b) in the below Table, it can be observed from the results that the most important ranked factor was "concern to learn from experience", which

is the highest score (RII=0.731), while the less important one was "prepared to serve the aspirations of the organization regardless personal agenda" with a RII=0.478.

Table 5 - The competencies' attitude of the project managers in Libya

Attitudes	RII	Ranking
A. Personal Values		
Concern for ethical behavior/courteous	0.702	1
Team approach	0.678	2
Prepared to take appropriate risk	0.600	6
Prepared to take responsibility	0.565	4
Maturity	0.668	3
B. Organization / Project		
Concern for stakeholder needs	0.600	4
Concern for safety & quality	0.720	2
Concern to learn from experience	0.731	1
Willing to play at organizational politics	0.692	3
Prepared to serve the aspirations of the organization regardless personal agenda	0.478	5

5.4 Knowledge Competence Variables

Table 6 shows the statistic results of competency level for knowledge competence of our project manager today. There are total 4 constituents (as listed below) and 17 subs-constituents have been analyzed: a) Organizational Context; b) Scope, Quality, Risk and Value; c) Time and Cost; and d) Human Material Resources and procurement Management. For organizational context, the most important factors was "organize completion & handover activities" and it was recorded as a factor number for the organizational context and RII vale was (0.668). As per section (b), the results have shown that "Project strategic planning" as the most important one amongst the listed factors where, Relative Important Index shows that value as (RII=0.687). With regard to section (c) the results for the knowledge competency are shown that "budgeting & cost management" was recorded as (RII=0.639), which is the highest score amongst the included factors in this study. While, section (d) shows that most important factor for the knowledge competency on the human material resources and procurement management is "Manage internal & external project material resources". However, it was ranked as a factor number one with RII value as (0.668). Overall, the results for all the factors in each section are presented clearly in Table 6 as shows below.

Table 6 - Knowledge competence of the Project managers in Libya

Knowledge Competence	RII	Ranking
A. Organizational Context		
Identify project environment & context	0.648	4
Coordinate project development processes & phases	0.653	2
Establish project organization structure & role	0.629	5

Programme project management	0.653	2
Organize completion & handover activities	0.668	1
B. Scope, Quality, Risk & Value		
Project strategic planning	0.687	1
Quality & regulatory management	0.668	4
Decide & identify risk management	0.678	2
Process review and value engineering knowledge	0.570	3
C. Time and Cost		
Appraisal techniques for evaluating options	0.570	4
Time & cost estimating	0.619	3
Time scheduling & phasing management	0.629	2
Budgeting & cost management	0.639	1
D. Human, Material Resources & Procurement Management		
Manage internal &external project material resources	0.668	1
Acquire, develop & manage project team	0.629	2
Plan &evaluate contracts	0.629	2
Perform contract close-out	0.570	3

5.5 Skills Competence Factors

Table 7 shows the statistic results of competency level for skills competence of our project manager in Libya. There are total 3 constituents (as listed below) and 17 subs-constituents have been analyzed: a) project Process; b) communication; and c) Leadership. For section (a) the digest RII value of 0.687 was recorded on the factor "Monitoring &controlling projects". Followed by "develop projects resources & capacity planning" as the second important one (RII=0.653). In term of section (b), the results showed that the most important factor for the skills competency on the communication components is "facilitate & resolve conflicts". From the results presented in Table (6), it can be seen that this factor is obtained a RII value (0.648). The final section is refers to the leadership factors. However, a factor like "ability to complete project on time" is appeared the highest ranked value and it was recorded as a factor number one (RII=0.702) and the lowest ranked factor was "ability to manage legal issues" and ranked as the sixth factor with RII=0.619 (Table 7).

Table 7 - The Competence skills for the project managers in Libya

Skills Competence	**RII**	**Ranking**
A. Project Process		
Define project requirement	0.609	4
Develop projects Resources & Capacity planning	0.653	2
Manage project execution	0.648	3
Monitoring &controlling projects	0.687	1
Close project	0.590	5

B. Communication		
Project communication needs &methods	0.599	5
Communicate in writing at all levels.	0.609	2
Communicate verbally at all levels.	0.600	4
(presentation / public speaking)	0.604	3
Facilitate & resolve conflicts	0.648	1
C. Leadership		
Managing information (gathering, assessing, integrating, organizing and documenting)	0.634	4
Negotiation and delegation of project information and process	0.624	5
Critical thinking and rational decision making	0.624	5
Building, leading and motivating teams to ensure commitment, respect and loyalty	0.668	2
Transfer knowledge (coaching, mentoring, and training)	0.658	3
Ability to manage legal issues	0.619	6
Ability to listen	0.624	5
Ability to complete project on time	0.702	1

6. Conclusion and Recommendations

The first objective was to identify the construction project managers' perceptions on the level of importance for core competency. However, this objective has successfully achieved as following:

Regarding the personal characteristic competency, a self reflection of the project manager was found as more influenced by "Sustained energy & enthusiasm", as the most important factor, followed by "Need to deliver results/ achievement oriented" as the second ranked one and regarding for the personal characteristic competency on the leadership / team management. From the results, the highest ranked factor is "integrity". Attitudes competence has play an important role in any level of job position because it reveals a personality value of a person who contact with. From the results, it is clear that the "concern for ethical behavior/courteous" as a fit factor for personal values. As for the organization and project, the attitudes of concern to learn from experience" is the priority of importance for a project manager. The second objective was to identify the level of competencies of construction project managers. However, from the results, it can be concluded that our project manager today is at the high level of competent. Finally, this study provides a competency model consisting of a list of competencies needed at this position level, therefore an effective job description for the Construction project manager position level in organization should include the required competencies.

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