

NECESSARY COMPETENCIES OF CONSTRUCTION MANAGERS IN A  
DEVELOPING COUNTRY

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Dedicated to

Those Who Stood By My Side and Motivated Me

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## ABSTRACT

One of the most significant obstacles in a developing country is related to non-productive investments or delay on productivity of construction projects. Following the development in the business world, the challenges for handling the businesses toward productivity raised as well. Construction industry plays an important role in the foundation of economy everywhere. Therefore, to undertake and push the projects through the challenges to achieve the productivity and the business advantages, a proper leadership by a competent Construction Manager (CM) is essential. Necessary competencies as the first objective, the importance of the competencies as the second objective, and finally prediction of a competent manager leading to a successful construction project based on CM's "Big Five Traits" as a psychological factor through the dominant challenges at working environment is as the last objective. In order to gather data, both quantitative and qualitative surveys were employed in the study. Interview, Delphi method, and questionnaires analysis have been utilised to fulfil the three objectives respectively. By the results of the survey, the projects' authorities can recognize the essential competencies, the level of competency, and finally a predictor for prominent construction managers based on CM's Big Five traits as a psychological factor before employment.

**Keywords:** Necessary competencies, CM's Big Five Traits, competent construction manager

## ABSTRAK

Salah satu halangan yang paling utama dalam sesebuah negara yang sedang membangun adalah berkaitan dengan pelaburan yang tidak produktif atau kelewatan produktiviti projek pembinaan. Disebabkan oleh perkembangan dalam dunia perniagaan, cabaran untuk mengendalikan perniagaan ke arah produktiviti turut dibangkitkan. Industri pembinaan memainkan peranan yang penting di dalam setiap asas ekonomi. Oleh itu, untuk menjalankan serta membawa projek- projek dalam menghadapi cabaran dalam mencapai produktiviti dan kelebihan perniagaan, adalah penting untuk mempunyai kepimpinan yang betul atau pengurus yang berwibawa. Kecekapan adalah perlu di mana ianya merupakan objektif pertama, kepentingan kecekapan dinyatakan sebagai objektif kedua, dan yang terakhir adalah meramal pengurus berwibawa dalam mengetuai projek pembinaan yang Berjaya berdasarkan CM's "Big Five Trait" sebagai faktor psikologi melalui cabaran yang dominan di dalam persekitaran kerja. Dalam usaha mengumpul data, kedua-dua kajian kuantitatif dan kualitatif telah dijalankan dalam kajian ini. Temuduga kaedah Delphi dan analisis soal selidik telah digunakan untuk menyokong ketiga-tiga objektif tersebut. Dari hasil kajian ini, pihak berkuasa dalam sesebuah projek boleh mengiktiraf kepentingan kecekapan, tahap kecekapan dan meramal untuk pengurus pembinaan terkemuka, CM berdasarkan "Big Five Traits" sebagai faktor psikologi sebelum mendapat pekerjaan.

**Kata Kunci:** Kecekapan Wajib, CM's "Big Five Traits", pengurus pembinaan yang cekap

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## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Background**

Professionalism can be defined as attributes and behaviours of a person or persons employed in profession that the others can trust him or her to do its activities in a correct way (Farndale, 2005). In order to raise the level of professionalism, associations usually are formed with common goals, including employment standards and Codes of ethics, sustainable development of the members' capabilities, identification of interacting areas and enhancing legal and social status in the community will be considered. In this regard, numbers of international experts in construction industry believe that professionalism is one of the major facing challenges to increase its effectiveness continuously (Boselie & Paauwe, 2005). Development of standard for competencies is one of the proposed actions in order to develop professionalism in management (Brockbank & Ulrich, 2001). The necessary standards usually are created for licensing and certification based on the competencies required for the occupations. There exists another factor in professions noticed that how a competent person can be recognized before entering the profession (US Project Manager Competency Development Framework, 2001).

### 1.1.1 The Concept of Competency

In the past, experts have suggested various components of competency. Maykl Lucy defined the competency by formula as follows (Losey, 1999):

$$\text{Intelligence} + \text{training} + \text{experience} + \text{Ethics} + \text{Favourites} = \text{Competency}$$

In Lucy's view, intelligence is not an acquirable but is the hereditary factor in this equation. It also is considered as the intellectual capacity of every human in learning, analysis of information to convert the raw data into information needed to solve problems. Training is another factor that plays a role in competency combination. The purpose of education is not just a college degree, but is a process that occurs continually and is based on different ways of learning. Following the rapid scientific development in the modern world, construction industry should constantly acquire new achievements in different specializations in order to maintain and to develop professional competencies. To keep the experts in touch with the progress and support those to participate in training regularly on this issue can be considered to promote the industry. Experience is the next factors that can be the greatest teacher in life. Managers and experts should not only rely on their own experience but they must exploit the experiences of the others.

The successful progress of a project can be on the duty of a project manager related to the main requirements considered in design such as quality, schedule, cost, and safety. Therefore, the role of construction manager is as the most significant factors on the economic foundation of countries due to the huge investment on construction project. At the early of 1990s, falling of construction demands caused severe competition leading to unexpected progress in the industry (Edum-Fotwe and



McCaffer, 2000). The contractors had to accept more serious duties on their contract by the methods such as 'design and build'. The new demand affected the traditional method by concentrating on productivity, performance, and quality the appearance of the method compared to the traditional methods caused the emergence of a competitive tendency to obtain the tenders.

Following the changes in the industry, project managers have to combine their roles with the aspects of technical, engineering, accuracy, reliability of quality and cost performance that some of them had not been included in their roles previously.

The talent of obtaining the highest quality and quantity of work progress with the least expenses is one of the most highlighted targets of a construction manager. In fact, awareness of the value of time and manpower, materials, and machineries are the basic necessities for a construction manager to push the projects. A CM must always seek the appropriate method and principle for organizing and carrying out the jobs on the best way to achieve the better benefits for the projects. For this purpose, there must be a manager with different specialization and significant characteristics.

Nowadays, given construction complexities and increasing fast productivity demands cause a construction management system to be had to compatible with progress of technology and specialized tools to achieve such goals. Awareness about how the project must be conducted and what method is suitable or how to do a job, need perfect plans and different knowledge especially with the complex management of construction projects associated with labour organizations with regard to labour laws and civil engineering machinery and increasing workshop costs. Today, managing project affairs have been emerged as a technology and science. Meaning that, just worker discipline cannot meet the solutions for the problems which are being faced in the construction sites.

To launch a construction project, the following five basic principles were offered by technical experts: 1- Responsibility Management 2- Raw Material Management 3-Human resources Management 4- Financial Management 5-Machines Management. Mentioned items are known as five M of workshop management in expression. The project manager has to pay necessary attention to them in order to plan and manage a project. Certainly this view requires the appropriate competency model of CM in the industry. Therefore, to identify the competencies and their prioritization are the most significant step towards employing a construction manager who are competent to achieve organizational goals. Also, to identify some variables related to outweigh the competencies can conduct evaluation of a construction manager.

## **1.2 Statement of the Problem**

A developing country contains many construction projects everywhere in different sizes. As an example Pars Jonoobi (south Pars) in Asalooeyeh Port in Iran is the first gas area in Iran and the second in the world with many crucial projects. As far, there are many important construction projects in the country; the role of a construction manager is one of the significant factors to push the projects towards productivity. Issue of untimely completion of a project can mean not to return investment and following that appearance of inflation in economy. It has been as a problem which countries have faced. A developing country has not benefited in the area of manufacturing industry scientifically and technologically rather than developed countries.

The role of leaders has been seen as a precipitator toward the goals of the project. The most significant goals of a construction manager are timely completion, quality and cost control. Thus, personality and specialization characteristics of a project manager play the essential role to achieve such objectives (Mescon; Albert&Khedori, 1985). In other words, the lack of competencies pattern to predict a

successful construction manager can cause deviation in a conducting project correctly. Thus, the employers may find later that their assessment of the construction manager employed would not be extracted during construction such as the way they expected. Therefore, recognition of competencies coming along their priorities and a predictor of competency level can lead to hire a suitable construction manager. Therefore, the following questions are defined as the research questions in this study.

### **1.3 Research Questions**

The following questions have been established and conducted in order to find solutions related to statement of the problems:

1. What are the necessary competencies of a CM in a developing country?
2. What are the priorities for the essential competencies of a CM in a developing country?
3. What equation could be developed based on competency level and Big Five traits of a CM?

### **1.4 Aim and Objectives of the Research**

To determine the essential skills, knowledge, and the characters for a construction manager in order to run a construction project smoothly towards a timely and proper productivity at construction industry and to evaluate the relation between competency level and Big Five traits are the aim of the research. Thus, the following objectives could be stated:

1. To identify the necessary competencies of construction managers in a developing country.
2. To prioritize the essential competencies of a construction managers in a developing country.
3. To evaluate the relation between the level of the essential competencies and Big Five traits of a CM in a developing country.

### **1.5 Significance of the Study**

Some investigations have been done about the managers and their skills and abilities on different fields such as Human Resource, Education and so on around the world, but none had not been concentrated on construction management enough, clearly, and directly in a developing country encountering many challenges. Among the fields, Construction projects as one of the most important economic sections play significant role in economy cycle of a country. They could cause failure of returning capital absorbed during progress and following that inflation in society if there is no appropriate conduction and leading beside the other factors such as outside cooperation and supports. Given the complexity of the projects, today the role of CM on technical guides and controlling the progress of a project became a very useful and significant tool to save such huge investments. Therefore, the need of scientific, technical competencies, skills and personality traits to push the project made a construction manager's role very sensible. In other words, the presence of a suitable conductor can prevent suspension or prolongation of the construction projects which are serious problems in construction industry. This research can be reliable to solve such problems related to leading a construction project.

## 1.6 Scope

This research focuses on the competencies and characteristics required for a CM on construction projects in a developing country. In this research, for the first objective, interview is employed and for the second objective, Delphi method is used to collect data and classify them. In order to answer the other questions (3&4) the questionnaires is applied to gather data. The participants in this study are experienced experts, managers and supervisors in construction projects.

## 1.7 Operational Definitions

The researcher has utilized various terms to refer the materials. To clarify the terms and make them recognizable, the terms are defined as follows:

*Construction manager (CM):* The term of construction manager is used to refer to an individual whose duty is to control and carry out different phases and aspects of a project from the very start point in preliminary steps until it is completed. In order to achieve this goal he has to do several crucial tasks. For instance, he has to plan, schedule, monitor, and control the project. Barry and Fryer (1996) believed that the most important aspect of a manager's duty is optimal use of time, control the expenses and finish the project with as good quality as possible.

*Competencies:* According to Brockbank and Ulrich (2008) competencies is defined as a combination of necessities including expertise, performance or treatment, information and capabilities which are necessary for an individual to implement a plan.

*Management and leadership competencies:* It is utilized to refer to identifying opportunities, preparing appropriate plans and programs, systematizing the complex, and monitoring the performances, that are some features of managers, to make them more beneficial, advantageous and favourable through competition and success (Schoonover, 2000; Brockbank, Ulrich, 2008).

*Personality:* Personality (individuality) is defined as thoughts, characteristics, and manners which have roles in an individual's capability to control and precede a project.

*Individual competencies:* Individual competencies include individuals' capabilities and proficiency to manage them besides the capability to be imaginative and inventive to find the best solutions for problems and make the most useful choices (Tipplet and Amros, 2003).

*Strategic competencies:* Strategic competencies refers to the capabilities and proficiency needed to recognize the occasions that exist outside and also the potencies and shortcomings existing in a system to be harmonized so that the formula can be executed, and the cross-functional decisions can be assessed so as to accomplish the objectives of the organization (Harrison and John, 2010).

*Communication:* Communication refers to the strategies and the procedures to exchange convey and share out information and opinions and approaches. The strategies consist of behaviour, writing, signal, and speech.

*Methodology:* A methodology is usually defined as a system that guides one how to find a solution for a problem through special constituents and elements like phases, tasks, strategies, approaches and instruments.

*Complement:* Something which makes something else complete, total and perfect.

*Social and communication competencies:* The capability and proficiency which help a person generate influential relationships and get in touch and communicate with other people (Tipton and Amros, 2003).

*Personality traits:* The ordinary pattern of feelings, notion, and manner which cause an individual's personality and identity to be particular and distinct (Goldberg, 1993; McCrae & John, 1992).

*"Big Five" factors of personality:* This term is defined as five extensive areas of aspects of personality which are utilized for determining the characteristics of mankind. The theory proposed according to Big Five factors is named the *Five Factor Model (FFM)*.

Costa and McCrae (1992) proposed the structure of personality traits as an influential powerful model for recognizing the relationship between characteristic and different academic performances. The Big Five factors consist of:

1. Openness ( creative / inquisitive vs. steady and careful)
2. Consciousness (competent/prearranged vs. unconcerned/not careful)
3. Extraversion (sociable/active vs. lonely/inactive)
4. Agreeableness (gracious/compatibility vs. bitter/heartless)
5. Neuroticism (apprehensive /anxious vs. safe/self-assured)

*Openness*: This kind of people like art, odd opinions, exiting activities, feelings, different kinds of experiences and imagination and inquisitiveness (Goldberg, 1993; McCrae).

*Conscientiousness*: those who enjoy a high level of consciousness in their characteristic are likely to be very well-behaved, self-regulated and intend to accomplish their goals (Gosling, 2008; Goldberg, 1993; McCrae and John, 1992).

*Extroversion*: An extravert person likes groups, is self-assured and seems optimistic in others' eyes. A person of this type is apt to search for simulation and collaboration with other people (Jung, 1921; Roesch and wee, 2006).

*Agreeableness*: Agreeable people like to be friendly, likable, empathetic, helpful, and supportive instead of being doubtful and challenger to other people in the society (Gosling, 2008; Costa and McCrae, 1992).

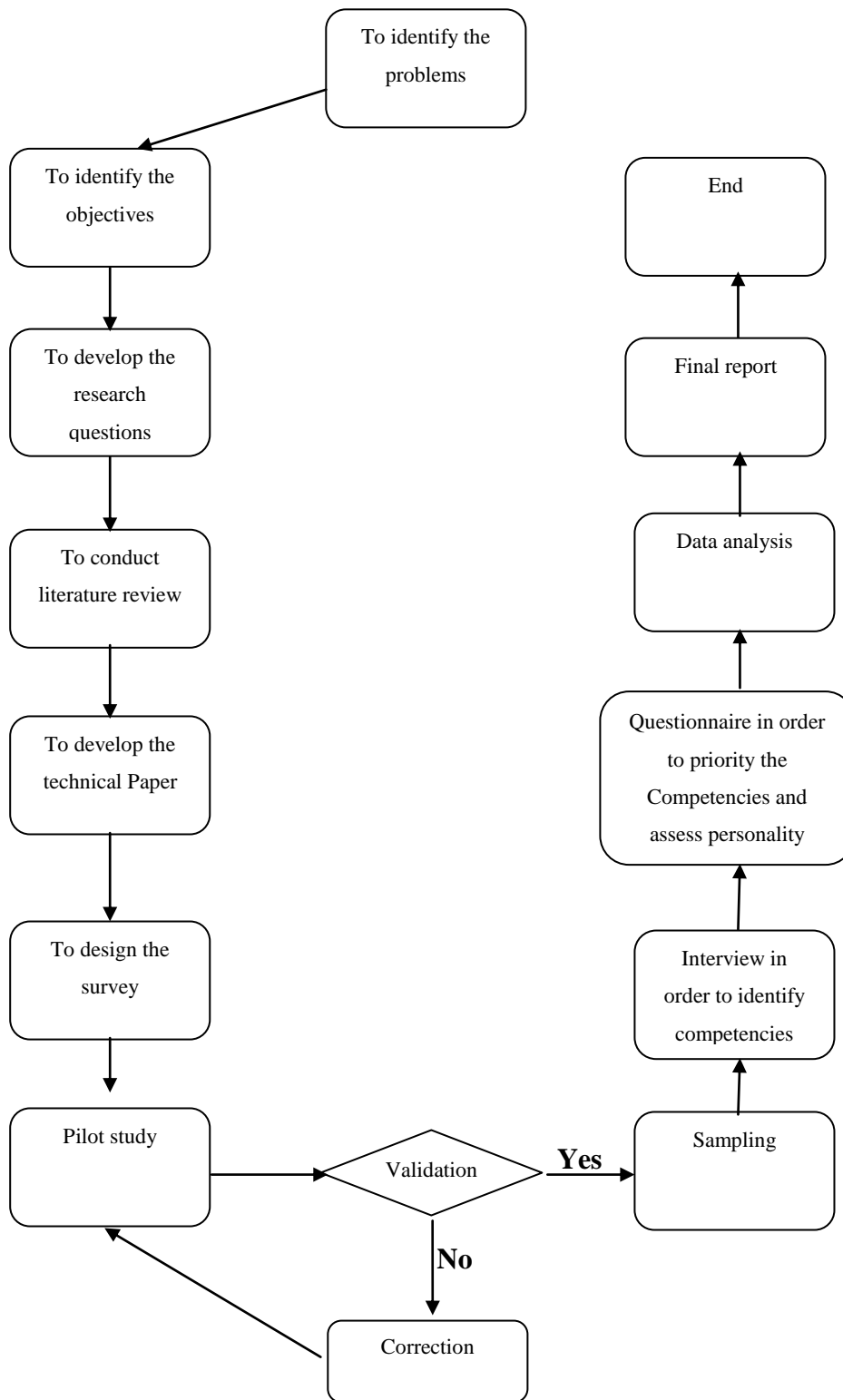
*Neuroticism*: In psychology, it is a basic feature of personality that appears by stress, unstable mood, being anxious, enviousness and jealousy. Those who are neurotic might not be able to manage their strong wishes and cannot postpone pleasure or satisfaction. Highly neurotic people have less stable feelings and show more reactions to anxiety (Tompson, 2008). To be anxious also can be useful in some situation.

## **1.8 Brief Framework of the Research Methodology**

The first step to conduct this study was to recognize the competencies that are necessary for CM managers. Then their competency levels were estimated.



Meanwhile, in the same step, the factors that influence the competencies were identified. (Refer to Figure 1.1 for more information)



**Figure 1.1:** Research Process Flowcharts

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