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INVESTIGATION ON ROLES AND TASK OF CONSTRUCTION MANAGERS IN DEVELOPING CONSTRUCTION MANAGEMENT COMPETENCY : PERSPECTIVES FROM MALAYSIAN CONSTRUCTION INDUSTRY

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Abstract

Construction managers form an integral part of the industry' workforce. Performing at the sharp end of the construction project, they contribute significantly to the success of any construction project. Construction managers in Malaysian construction industry are faced with a situation whereby the fundamental roles and tasks they perform are witnessing a gradual shift in focus. In order to maintain their professional competency, practicing in construction project adapt to this changing industry environment by relying on knowledge and skills acquired through education and training. This paper discussed the need to investigate the roles and tasks performed at the job, taking into account the personal, situational and organisational variables which can impact the construction management competency. This research presents a study that focuses on the development of construction managers and how they maintain their professional competency in a changing construction business environment. The paper first sets out the areas of roles and tasks required for construction management for today's construction managers. This implies that an improved approach of establishing the general roles and tasks that are perceived as essential for developing construction management competency in the construction industry. It emerged that in the main, notwithstanding the size of construction organisation employing them Malaysian construction managers have roles and tasks which are fundamentally common.

Keywords:construction management; competency; roles and tasks of construction managers

1. Introduction

The growing complexity of the construction industry forces professional construction managers to evolve and adapt. The level of education for a manager has become much higher in the construction industry (Christodoulou, 2004). Education and training are recognised as fundamental approaches to assist the Malaysian construction industry meet the increasing demand for adequately trained and qualified construction managers. However, the problem of inadequate education and training of the industry's construction managers is persisting (Hassan, et. al, 2008). Coupled with the reluctance of employers to educate or train their people, exacerbated further by the many qualified construction managers that have gone overseas in search of better remuneration and pay, the numbers of trained and experienced construction managers are dwindling. A research investigating approaches for improving the framework for education and training construction managers in the Malaysian construction industry is ongoing and part of its findings suggest the basis on which the education and training provisions are designed should be re-examined. This paper presents a part of the research which investigates the actual roles and tasks of construction managers from different sizes of construction organisations.

2. Literature Review

2.1 Management and Construction Managers

Construction management exist within project organisation with the aim to achieve the objectives set out by the clients, which are usually the combination of cost, time, functions, quality and/or utility objectives. While the broad spread of construction management work is carried out by several types of people, the whole spectrum of work in ensuring the effective implementation of the construction works are shouldered by construction managers (Millward *at el*, 1998; Calvert *et al,* 2003). They are responsible for the production and the execution of the construction work at the project site; through the effort of teams of people; sub-contractors, specialists and construction resources (Walker, 2007; Harris *et al,* 2006)

2.2 Construction Education and Training

There is a strong tendency to perceive construction education as associated with the early years of the individual's learning in a structured form, and training as the improvement of the individual to meet the demands of his job. Principally, there is little differentiation between education and training as both are inter-woven (Hassan, 2005). Education and training spawns within the realms of learning within the context of individual and organisation development. As effective vehicles for learning, education and training both can significantly contribute to quality and performance improvements of people in their job (Mullins 2005; Matrix 1998). Effective construction education and training pivots on their purpose, content and delivery, this is usually hallmarked by the benefits derived collectively by the individual, the employer and the job. Bechtel and Squires (2001) and Davis and Davis (2001) assert that the focus on people, understanding the human behaviour within the scope of their job and the organisation should be the foundation of any education or training undertaking.

2.3 Construction Managers Competency

The concept of competence or competency has dominated the management strategy literature of the 1990s, which emphasized 'core competence' as a key organisational resource that could be exploited to gain competitive advantage (Deist and Winterton, 2005). Since then there has been a global acceptance of the importance of appropriate competencies which underpins desired level of performance for most management roles. The word competencies have been defined in various styles and context, according to Golob (2002), competency refer to concept that focuses on what is expected of an employee in the workplace and embodies the ability to transfer and apply skills and knowledge to new situations and environment. Meanwhile, Mansfield (1996) reckons competency as skills and traits that are needed by employees to be effective in a job. Holmes & Joyce (1993) define competency as action, behaviour or outcome which a person should be able to demonstrate, or the ability to transfer skills and knowledge to new situations within an occupational area. Professional competency in construction management is attained by the combination of knowledge acquired during education and training, and skills developed through experience and the application of the acquired knowledge. While education and training is usually associated with the performance 'gaps' of people in their job, Needs Analysis (NA) is the critical part of the education or training design process which endeavours to reduce the 'gap' by finding out what needs to be learnt (Anderson 1993; Garavan 1997, Bee and Bee, 2003). Performance 'gaps' imply that there is a shortfall somewhere in the individual's knowledge and/or skills to undertake certain roles or tasks and NA is the diagnostic part of the whole education and/or training process. Without NAs, there can be no solid prognosis to indicate if the whole education and/or training process are correctly designed (Bee and Bee, 2003; Wills, 1998; Anderson 1993). Therefore it is essential to establish the roles and tasks of construction managers in developing the construction management competency from construction industry perspectives.

2.4 Roles and Tasks of Construction Managers

Precisely prescribing the duties of construction managers can be difficult as their roles and tasks can be variable. Their personal background (their qualifications and career progression path into construction management); the organisation employing them (size, type and job specialisation) and the project setting within which they perform (building, civil, renovation and maintenance work) can have a significant influence on their job. Fryer and Fryer (2004) recalls when most construction managers were asked what they do, most answer with terms such as planning, organising, directing and controlling. On the skills required they would classify the skills as human, technical and conceptual skills. They add that although technical and conceptual skills are important, the manager's potential cannot be realised if the manager fails to bring together a cohesive team. To circumvent this ambiguity, Walker (2007), Harris and McCaffer (2006) suggest that planning, organising, coordinating, controlling, communicating, leading and motivating are the key tasks that construction managers perform during the process of managing the construction project. They add that in the due process, they will have to perform a variety of technical and social roles to drive the project process. In summing the works on construction management by Farrell (1999), Mustapha (1990), Burgess (1999) and Hassan (2005), the culminating view of on construction management identified for this research encompasses; (i) the responsibility for all production management of the work undertaken, (ii) the execution of the job at the construction site; (iii) the management of sub-contractors, specialist and construction resources on site; (iv) the management of all related activities on site, (v) it takes team effort to execute the job; (vi) the composition of the teams is usually relative to the nature and size of the project, and; (vii) site managers are important in all the circumstances.

3. Research Methodology

The aim of the research was to establish the common roles and tasks of construction managers in managing construction projects. This variable investigated is the influence of the size of the construction organisation employing the construction managers. Quantitative research method using the postal and self-administered questionnaire survey was adopted. Selected random sampling comprising of respondents representing project managers, construction site management personnel together with professionals consultants from the quantity surveying; civil, mechanical and electrical and engineering; and architectural disciplines were carefully chosen.

3.1 Data Collection

Following the pilot research process, postal and self-administered questionnaire surveys were carried out. The participants in the survey were respondents form the construction companies registered under CIDB and consultant companies which operates through their main office in the Klang Valley. Data were collected from 136 respondents comprising of 34 selected project managers, 23 construction managers, 20 site managers, 18 site supervisors, 32 quantity surveyors and 7 others professionals (comprising of engineers, surveyors and architects) from the construction companies undertaking variable construction works ranging from building, civil engineering, repair and upgrading works. The respondents were classified into three main categorise; (i) small construction companies (<14 employees), (ii) medium construction companies (15-49 employees and (iii) large construction companies (>50 employees).

4. Result from Analysis

The roles and tasks of construction managers were first investigated to map the perception of their importance. Data drawn from the respondents were triangulated during the analysis. Every aspect of the study is analysed and measured using the SPSS program. Descriptive and inferential statistics were adopted to verify the results of the analysis. Frequency analysis was adopted as the measure of central tendency. Co-relational Analysis or Analysis of Variance (ANOVA) was considered in the event of marginal results and findings. However, these analyses were not employed when strong and common tendency towards common results was recorded on all the cases and portrayed into percentage and table for better understanding

4.1 Roles and Tasks of Construction Managers

With the exception on the importance of construction managers to manage to achieve environment objective (with a median value of 2.50), the analysis result suggest that managing to achieve time, cost, quality, health and safety and environment are very important tasks that must be undertaken by construction managers regardless of the size of the construction organisation. There is little to separate the importance between these objectives, and the median scores (all above 3.40) suggest that the respondents unanimously consider them the very important tasks of construction managers. Managing to achieve environment objectives respectively recorded smaller values by small construction organisation to suggest that they do not consider these objectives as important as time, cost, quality and; health and safety objectives.

Analysis on the importance of construction managers managing resources (*plant, labour, materials, staff* and *sub-contractors*) recorded very similar results (all values recorded were above 3.20). However, there was slight lower value score for the results for the importance of the construction managers from small construction organisation to manage *plant* (3.00) and *staff* (2.41) compared to construction managers in large and medium sized organisation. As in the analysis on the importance of managing construction resources, this suggests that the respondents also consider *managing plant, labour, materials* and *sub-contractors* very important for construction managers. The lower scores recorded for importance for managing *plant* and *staff* tends to imply that construction managers in smaller construction organisation undertake less of these tasks.

The respondents consider it's important for construction managers to be responsible to Third Parties especially for the construction managers from large and medium sized construction organisations (median values above 3.27) followed by those from small sized construction organisations. Responsibilities to the Main Contractor were considered to be most important, followed by responsibility of Clients and Consultants. Responsibilities to the Authorities are considered as lesser important. The results also suggest that the respondents conceive responsibilities to Third Parties tend to decrease with the size of construction organisation.

Results from the analysis on the importance of construction managers to undertake Sundry Duties *(surveying works, administration duties and pre-construction works)* (Figure 5) suggests that the respondents consider it is important

for construction managers especially in large and medium construction organisations to undertake administrative and sundry duties (all registered the values above 3.00). Meanwhile, the respondents tends to consider that it is less important for construction managers in small construction organisations to undertake administrative and sundry duties (where the result shows the values above 2.00 but below than 3.00).

The Spearman Correlation Coefficient tests found that, there was a weak but significant negative relationship between size of construction organisations with *managing labour* and *materials* to infer that there was a small tendency for larger construction organisations to consider managing these resources less important for their construction managers. There was also a weak but significant positive relationship between size of the construction organisations with the importance of managing projects to achieve *environment objectives*, to perform Pre-construction Works, undertake Survey Works, and be responsible to Third Parties i.e., Clients, Consultants and the Design Team. This infers that there was a small tendency for larger construction organisations to consider their construction managers undertaking these roles and tasks more important. Whilst the results suggest these variables have an influence on the construction managers' training needs, their low values (>0.15 significance) suggest that they are not significant enough to influence the overall results. Therefore it was deduced that these variables does not have much significant impact on the construction managers' training needs.

4.2 Findings Emergent from the Research

The research set out to establish the significance of the size of construction organizations employing the construction managers on their roles and tasks for establishing the Needs Analysis for the design and delivery of their education and training. It emerge that in the main, Malaysian construction managers from the variable sizes of construction organisations have roles and tasks which are fundamentally common. Notwithstanding this, construction managers are generally expected to undertake a range of common roles and tasks within their job. Managing to achieve project objectives (time, cost, quality, health and safety, and environment), managing resources (plant, labour, materials, staff and sub-contractors), responsibilities to Third parties (Main Contractor, clients and consultants, and authorities) and undertaking sundry duties (administration duties, surveying works and pre-construction works) are all the important jobs of construction managers.

Conclusion

The importance of construction management derives from the nature of how the management of construction project activities is conducted. Its growing take up in other industries as a result of the productivity gains that can be associated with implementing this managerial technique cannot be overlooked. Developing the requisite competency to ensure efficient performance on the part of the managers who run projects is therefore essential to its success. This study is an initial effort to assess the roles and tasks of construction managers in Malaysian construction industry by considering the impact of the construction organisation employing them. Understanding the roles and tasks of construction managers against the context of their organisational setting are the essential pre-requisite for establishing their education and training needs.

Culminating from this, the research posits that this should be the fundamental starting point for providing an insight on how such acquired competency can be made relevant to the changing business circumstances of the industry. The paper established the expected roles and tasks of construction managers and how, increasingly, they are required to perform roles outside the traditional scope of management.

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Importance Rating (1) not important, (2) fairly important, (3) important, (4) very important

Roles and Tasks of Construction Managers	***Level of Important***													
	Small construction companies (G1-G3)					Medium construction companies (G4-G5)					Large construction companies (G6-G7)			
	No	*Median*	*%*		*Rank*	*No*	*Median*	*%*		*Rank*	*No*	*Median*	*%*		*Rank*
1 ***Managing Construction Resources***														
a. *Plant*	34	3.00	75	%	4	36	3.46	87	%	4	66	3.38	85	%	5
b. *Labour*	34	3.26	82	%	2	36	3.64	91	%	3	66	3.64	91	%	2
c. *Material*	34	3.35	84	%	1	36	3.73	93	%	2	66	3.76	94	%	1
d. *Staff*	34	2.41	60	%	5	36	3.32	83	%	5	66	3.39	85	%	4
e. *Sub-contractor*	34	3.21	80	%	3	36	3.74	94	%	1	66	3.61	90	%	3
2 ***Managing Project Objectives***														
a. *Time*	34	3.65	91	%	1	36	3.80	95	%	1	66	3.91	98	%	2
b. *Quality*	34	3.50	88	%	2	36	3.72	93	%	2	66	3.92	98	%	1
c. *Cost*	34	3.41	85	%	3	36	3.70	93	%	3	66	3.83	96	%	3
d. *Health & Safety*	34	3.26	82	%	4	36	3.34	84	%	4	66	3.52	88	%	4
e. *Environment*	34	2.50	63	%	5	36	3.02	75	%	5	66	3.32	83	%	5
3 ***Sundries activities and administrative duties***														
a. *Surveying works*	34	2.21	55	%	1	36	3.19	80	%	3	66	3.15	79	%	3
b. *Administrative works*	34	2.59	65	%	2	36	3.24	81	%	2	66	3.23	81	%	2
c. *Pre-construction works*	34	2.79	70	%	3	36	3.60	90	%	1	66	3.47	87	%	1
4 ***Responsible to third parties***														
a. *The Authorities*	34	2.71	68	%	3	36	3.43	86	%	3	66	3.27	82	%	3
b. *Main Contractor*	34	2.97	74	%	1	36	3.62	90	%	1	66	3.73	93	%	1
c. *Clients, Consultants and/or the Design Teams*	34	2.82	71	%	2	36	3.60	90	%	2	66	3.67	92	%	2

Fig. 1: The level of Importance of Roles and Tasks of Construction Managers

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