

Effectiveness of Human Resource Management in Construction Project

Idris Othman

Department of Civil Engineering
Universiti Teknologi Petronas
Tronoh, Perak, Malaysia
E-mail: idris_othman@petronas.com.my

Arazi Idrus

Department of Civil Engineering
Universiti Teknologi Petronas
Tronoh, Perak, Malaysia

Madzlan Napiah

Department of Civil Engineering
Universiti Teknologi Petronas
Tronoh, Perak, Malaysia

Abstract—Problems that had been taken into consideration in this study is the Human Resource Management in Construction project. Construction uses more manpower in its business activities compared to the other fields, but its human resource management is still inadequate and insufficient attention. The problems concerning human resource management in construction project need to be identified and the methods to improve them need to be formulated and implemented for the success of construction project. In this study, the methodology used is by questionnaire survey and further discussed in the case study done in a construction site in Kuala Lumpur. The questionnaires were distributed to contractor's companies all over Malaysia and the feedbacks obtained will be used for the case study for further clarification. The results of the study had shown that there are awareness among the contractors in Malaysia about the importance of human resource management on the success of construction project. The problems of human resource management in construction project had been identified and the methods for the improvement of it had been discovered based on the survey and the case study done.

Keywords-construction, human resource management, improvement, problems.

I. INTRODUCTION

In the fields of architecture and civil engineering, construction is a process that consists of the building or assembling of infrastructure. Far from being a single activity, large scale construction is a feat of multitasking. Normally the job is managed by the project manager and supervised by the construction manager, design engineer, construction engineer or project architect[1]. For the success of a project, a lot of thing must be taken into consideration in the aspects of planning and managing such as the human resource, safety and health, construction delays, designs of architecture and engineering, material availability and quality, the clients need, and financial or economic

limitations. One of the aspects that are viewed to be the most important and crucial in this study is the human resource management. Human resource management (HRM) is the strategic and coherent approach to the management of an organization's most valued assets - the people working there who individually and collectively contribute to the achievement of the objectives of the business. The terms "human resource management" and "human resources" (HR) have largely replaced the term of "personnel management" as a description of the processes involved in managing people in organizations. In simple words, HRM means employing people, developing their capacities, utilizing, maintaining and compensating their services in tune with the job and organizational requirement[2]. This study will emphasize and discuss on the human resource management in construction project as the main factor to the success of construction project. This study will also analyze the factors that influence the human resource performance and discover the methods or ways to enhance and improve the human resource management.

II. BACKGROUND

Construction has been a subject that had been studied all over the world in terms of human resource management and work force involved in construction such as in Europe, Australia and even Asia. A lot of journals, theses, case studies and even books have been produced regarding the human resource in construction project. The author's analysis varies according to their experience and research but it all had been for one main goal which is the human resource management impact in construction. All researches that had been done until now still unable to really prove the significance impact of effective human resource management and techniques to improve it. The human resource management has been widely defined as a field of organizational activity and professional practice. It has remained a complex and unclear entity, variously interpreted by practitioners and researchers [1]. Slotte et al.[2] defines human resource management as "covering functions related primarily to training, career development, organizational

development, and research development. In addition to other organizational HR functions where these are intended to foster learning capacity at all levels of the organization, to integrate learning culture into its overall business strategy and to promote the organizations efforts to achieve high quality performance" [2]. The human resource management as an academic discipline includes the development of knowledge and expertise, and the enhancement of performance nowadays [3]. A forceful human resource management system is also the most valuable asset of 21st century construction companies, as an enterprise's productivity is closely correlated with its strategies [4]. With rapid changes in technology, worker's needs, current market, and competitive environment, planning for human resources have become an important and challenging task for development. The human resource planning involves plans for future needs of employees, their required skills, acquisition of employees, and personnel development.

The human resource management actually has their specific characteristics in a company. The authors claimed that "due to specific characteristics of the project-oriented company, particularly the temporary nature of the work processes and dynamic nature of the work environment, there exist specific challenges for both organisations and employees for human resource management in project-oriented companies, and that these have been neither widely acknowledged nor adequately conceptualised in the existing mainstream human resource management literatures". Within the typical human resource management literature, there is a long tradition of research arguing that in order to make an optimal contribution to firm performance, human resource management policies and practices should be integrated both with firm strategy, so-called vertical strategic integration [5] and with each other, so-called horizontal integration [6]. The orientation of the human resource management function, its goals and aims, need to be aligned with the strategy of the organization. If we consider "managing by projects" as the strategy of the project-oriented company [7] this would imply that the human resource management policies, processes, and practices in the project-oriented company are in some way supportive of project-oriented working and are different from more traditional human resource management processes and practices which are designed for the classically-managed organization where the emphasis is not on projects but instead on routine products and services and where the job requirements are well defined and stable [8]. From the journal, we can see that there is major difference between the typical human resource management and the management based on project-oriented company. The human resource management changes due to the people itself and the working environment. The management should apply their policy and strategy according to the needs and requirements of its employee to ensure they can respond positively and contribute to the company.

There had been an argument whether the level of skill among the labours have a significance effect toward project success or vice versa. One of the main issues in this journal talks about the training of the workers in construction project. Training and development is defined as a process of developing work-related knowledge and skills in employees

for the purpose of improving the employees and projects performance systematically [9]. Managers, executives, and supervisors can have a significant constructive impact on the transfer of knowledge and skills to their subordinates [10]. A system of "performance measures" is needed in order to monitor improvements (or lack of improvements) among construction teams. They advice managers to display "quality indicators" on-the-job site, "which creates awareness among and encourages the participants to achieve improvement" [11]. In fact, it is accepted that construction firms face a lot of difficulties in the training and development of labour and staff. There are two significant methods of training construction workers which are on-the-job and off-the-job training.

Construction is one of the industries that use men power or labour in a large scale compared to other industries. Construction involved a variety of people starting from the clients, administrators, managers, designers, contractors, consultants, supervisors, foremen, skilled labourers and unskilled labourers. These people all differ in terms of education, experience and views. Even though construction is viewed as an industry that uses the most of human resource due to its low technology and people reliant, the attention given to its human resource management issues are still inadequate and insufficient[12]. According to the studies done on various construction projects all around the world, it shows that human resource management issues and problems regarding the personnel and labour in construction greatly influenced the success and performance of a project. This project will analyze the human resource management in construction projects, examining the strategic and operational aspects of managing people within the construction sector. This study will also aim to investigate the human resource itself which is the personnel and the labour that involved in construction to observe their characteristics and needs and efficiently find ways or methods to develop these attributes.

The aims or objectives for this study can be divided into two which are firstly, to prioritize the human resource management as one of the key aspect in the success of construction project and second, to identify the problems/issues of human resource in construction project and find the methods to improve it.

III. METHODOLOGY

The method that had been used for this research is by literature review and followed up by data collection using questionnaires and interviews. The author's focus had been on the contractor's side by observing and monitoring their human resource management approach and system. The research starts first with literature review on the topic of human resource management in construction project. The pilot survey had been conducted to identify and making sure the effectiveness of the questionnaire survey. The questionnaire survey commenced right after the questionnaire had been improvised according to the pilot survey. The data from the survey will then be analyzed to attain the useful information. For the purpose of strengthening and further elaborate the survey, a case study had been carried out on one of the construction site located in Kuala Lumpur. For the case study, there will be some

data limitations due to time and money constraints and also confidential information.

The literature review is the preliminary stage of research to get the information and knowledge of the topic, human resource management in construction project based on the past researches and case studies that had been done by the previous researchers regarding the respective topic. At this stage, the research will be implemented only by documentation research such as books, journals, conference texts, agencies bulletin, project papers, internet etc. This stage is very important in order to help the author to get the general ideas and overviews regarding the scenario of human resource management in construction project in the past and in the present and also the development and changes of it in the future. In the literature review, the author will be focusing the research on the:

- The problem regarding the human resource management in construction project, and
- Methods or changes that had been done to improve the human resource management in construction project in the past.

Pilot survey or also called exploratory survey is a small scale methodological test intended to ensure that proposed methods and procedures will work in practice before being applied in a large and expensive investigation. It is a survey usually carried out prior to the main survey with the intention to gain information to improve the efficiency of the main survey. It is also used when the surveyor has little knowledge about the material. Since the author is unfamiliar with the topic of project management, conducting a pilot survey is a must. The pilot survey had been conducted among the students and staffs of Universiti Teknologi PETRONAS and some contractors company in Malaysia. The responds and feedbacks received will be used to modify and improve the questionnaire for the survey.

The aim of the data collection is to gather information regarding the human resource management and the human resource itself in construction site. The data collection will be conducted using Qualitative research which is concerned with testing the theory presented in the objective. The data collections are basically done by two ways:

- Questionnaire

This will be the main alternative to gather information. People are more truthful while responding to the questionnaires regarding controversial issues in particular due to the fact that their responses are anonymous. The questionnaire survey will be distributed to the contractor's company all over Malaysia and it will be conducted online.

- Case Study / Interviews

Second alternative to gather information, the research will be done by asking question regarding the human resource management in construction project. This type of data collection will have a distinct advantage of enabling the researcher to establish understanding with potential participants and then gain their cooperation. These interviews also allow the researcher to clarify ambiguous answers and to seek follow-up information.

IV. RESULTS AND DISCUSSION

The author had distributed the questionnaires to contractor's companies all around Malaysia and had received the feedbacks from 25 companies all together. Since this study is a qualitative study, the feedbacks obtained are sufficient enough. The questionnaire consists of three sections, General Information, Problems/Issues of Human Resource Management in Construction Project and Methods to improve human resource management in construction project.

For this section, the respondents had been asked about their background. The questions that had been taken into considerations are:

- Years of experience in construction project
- No. of projects that they had been involved
- The importance of human resource management in construction project

A. General Information

The years of experience of the contractors in construction projects will reflect the reliability and the accuracy of the responds received. The author had divided the respondents to be in two groups according to their experience which are the group that had less than 5 years of experience and the group which has more than 5 years of experience in construction project. 44% is the group which has less than 5 years of experience and can be considered as young contractor or young engineer while the other group which is 56% can be considered more senior in construction project.

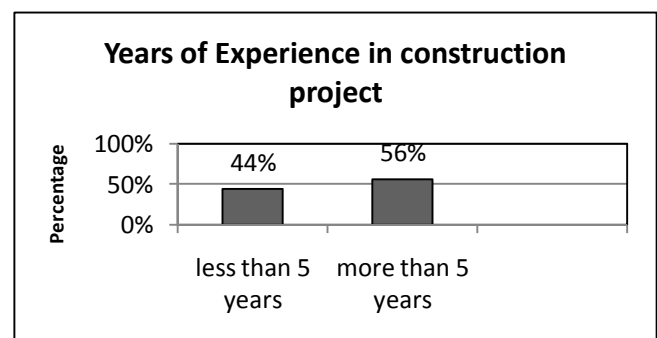


Fig. 2: Years of Experience in Construction Project

The number of projects that the contractors had been involved with can also be taken into consideration to add the validity to the responds. There are no contractors that involved in only one project. The percentage for the contractors that had involved in more than 5 projects is 20% which is the same as the contractors involved in two projects. This can be considered as a good combination with regards to the questionnaire to see the difference in opinion between the contractors.

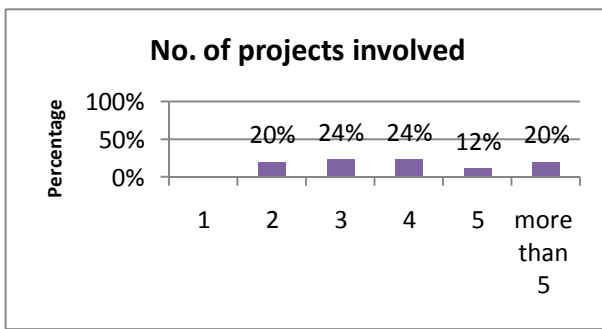


Fig. 3: No. of Projects Involved

In the General Information section, the author had asked the respondents one question to see the awareness regarding the importance of human resource management for the success of construction project among them. Unsurprisingly, all the respondents had given positive responds toward this question. All the respondents had agreed that human resource management is important for the success of construction project.

B. Problems/Issues of Human Resource Management in Construction Project

In the section B, which is the problems/issues of human resource management in construction project, most of the respondents agree that project manager should play their role in implementing human resource management to their subordinates while the duration of a project is too short for the implementation of human resource got the lowest average index. From the results, it can be said that the project manager is the one that can implement human resource management thoroughly and effectively in construction project. He/she who has the power to give order in a construction site can execute the plan for human resource management to engineers, consultants, supervisors, foremen and even labourers. It will be a problem in a construction site if the project manager himself/herself did not play their respective role in order to make sure the project runs smoothly without any major problem especially in human resource management which is considered to be the most difficult to handle. Lack of communication ranks second according to the survey, this problem is quite crucial in the construction project as for example if the communication between the staffs and workers is not well implemented, the flow of information from the top management to the subordinates will not go smoothly. The third ranking problem is the teamwork in the construction team is insufficient. The lacks of teamwork can lead to disagreement between the personnel and even worst can even led to affect the performance of project.

The respondents have rank the problem of the duration of project is too short for HRM implementation as the lowest which means that the people involved in construction project did not see it as a problem for human resource management to be implemented. This problem may be insignificant to them due to the mindset that the human resource management can be executed in a short period of time instead of long period of time to be implemented successfully.

Table 1: Ranking of Problems/issues of human resource management in construction project.

Rank	Problems/issues	Average Index
1	Project managers plays an important role	4.68
2	Lack of communication between personnel and labourers	4.64
3	Teamwork in the construction team is insufficient	4.56
4	Lack of skilled labourers	4.52
5	Training provided is not enough and inadequate	4.32
6	No or lack of evaluation for the personnel and labourers performance	3.20
7	No or insufficient reward for personnel and labourers with good performance	2.92
8	Duration of projects too short for HRM implementation (1 year, 2 years, and so on)	2.20

C. Methods to Improve Human Resource Management in Construction Project

In section C, the respondents had been asked about the methods to improve the human resource management in construction project. As can be seen the results in table 4 and figure 10, many agreed that frequent communication between personnel and labourers will improve the human resource management and thus, making the performance of project to be better. With good communication between the managers, engineers, consultants, contractors, supervisors, foremen and labourers about the progress and problems in the construction site, any arising matter can be handled effectively and systematically. The second ranking is appointing experienced or well-trained project manager. By doing this, this particular project manager can organize and handle his/her construction team to be more efficient and progressive in the project. Assigning skilled workers is also considered important in projects. The works on-site will definitely progress much more quickly when a lot of skilled workers are being assigned. This will certainly improve and increase the overall performance of projects.

As for the lowest ranking, which is to provide rewards for personnel and labourers with good performance seems to be less effective to the people involved in construction project to improve the human resource management. It can be said from the results that giving rewards or incentive such as money will caused rivalry or unhealthy competition between people in construction site where they will try to do the jobs quickly without considering the quality and danger to other people or mat be even sabotaging other people in order to gain the rewards.

Table 2: Ranking on Methods to improve human resource management in construction project.

Rank	Methods	Average Index
1	Ensure frequent communication between personnel and labourers	4.64
2	Appoint experienced or well trained project managers to handle project	4.56
3	Assign more skilled workers in project	4.48
4	Ensure participation and team belonging is developed in the construction team	4.48
5	Evaluation of personnel and workers conducted regularly	4.16
6	Provide sufficient and effective training	3.52
7	Start the team building even before the project started (during conceptual stage)	2.72
8	Provide reward for personnel and labourers with good performance	2.04

D. Case Study

The case study which the author had done was on the “Pembinaan Kompleks Kementrian Dalam Negeri Wilayah Persekutuan Kuala Lumpur”. This case study was done to further elaborate and discuss the questionnaire survey that was done before to see the validity, the reliability and the accuracy of the data obtained from the survey. This project contains 1 block of administration building (7 storeys) and 1 block of community building (3 storeys) and it is located on Lot 53782, Jalan Sri Hartamas, Kuala Lumpur. This project commenced on April 2009 and being scheduled for completion in April 2011. This project is the Turnkey project which is also known as a design and build project. The client is Kementerian Dalam Negeri (KDN) and the Project Director, Jabatan Kerja Raya (JKR) had assigned Asas Meranti – Tidalmarine JV (AMTMJV) as the main contractor for this project. Since the project is “design and build” type, AMTMJV had assigned Mega Consult Sdn.Bhd and Dr. Nik & Associates Sdn. Bhd as civil and structure consultant and Conlay Construction Sdn. Bhd as sub-contractor. The construction of the project currently had achieved 95% completion. The remaining works that need to be done for completion before handover are the landscaping, road and clearance of site. Figure below shows the current progress of the project. For the case study, the author had his focus upon two sections, the Main contractor, Asas Meranti – Tidalmarine JV (AMTMJV) and the Sub-contractors such as Conlay Construction Sdn. Bhd., DNA Post Tensioning Sdn. Bhd., Ifcon (M) Sdn, Bhd., Ifcon Geotechnical Sdn. Bhd. and Portneka Sdn. Bhd. Unsurprisingly, the Main contractor and the Sub-contractors had different views and opinions all together regarding the human resource management in construction project.

• Main Contractor

The Project Manager for this project, Mr. Abang Abdul Halil Abang Naili which is the Main contractor with regard to the question in the survey said that the human resource management should be more focused on the communication and the spirit of teamwork in the construction team. According to the Project Manager, the key to success in the construction industry is team work, with an in-built mechanism for communication from everyone in the

construction site. In the structure of the organizational hierarchy, the channel of communication should flow freely from top to bottom and also from the bottom to the top. The channel of communication should not stop with the managers, but it must also reach the engineers, supervisors and even the labourers. This will strengthen the teamwork in the construction team and hence increase the performance of that particular project. Mr. Abang Abdul Halil Abang Naili also added that each sub-contractor must introduce a communication channel between their subordinates and supervisors. For example, the supervisor should report any arising matters to the respective contractor and also be informed and be responsible for issues pertaining to subcontractors. To attain this, Main contractor must conduct frequent meetings, site audits and inspections with the sub-contractors.

• Sub-Contractors

As for the sub-contractors, their view towards the human resource management is more on the labourers and supervisors on-site. According to Mr. Wan Mohd Nazim Wan Muhammad, one of the sub-contractor in this project, the problem in construction project is to get the skilled workers particularly in the specialized field such as the post tensioning works. By assigning more skilled workers, the project’s performance and workflow will undoubtedly increased by a large margin. Mr. Nazim also said that they had been a case in this site where the progress on this site had been delayed due to the problem regarding the post tensioning works. The slab concreting process had been put on hold for about 2-3 weeks because of this problem. The reason for the delay was due to the slow installation of the post tensioning works that had been caused by lack of skilled workers for the respective task. The problem had been solved by bringing the skilled workers and the progress for the project had increased significantly. Responding to the comment made by the respective sub-contractor, the author had asked the project’s planner for the detail on the progress of the construction site.

V. CONCLUSION AND RECOMMENDATION

Based on the research done, it can be concluded that human resource management in construction project need to be further improved and monitored from time to time for its effectiveness. From the survey and the case study, the author believed that the contractors in Malaysia had the awareness about the human resource management in construction project. However, improvements in many aspects need to be considered in order to ensure the effectiveness of human resource management. The first objective of this study which is to prioritize the human resource management as one of the key aspect in the success of construction project had been achieved. All the respondents in the survey and the case study had agreed that human resource management is important for the success of construction project. This shows that the contractors had agreed that by carefully and efficiently managing the human resource regardless of their position in construction project, the overall performance and progress of construction project

will drastically increased. The second objective which is to identify the problems/issues of human resource in construction project and find the methods to improve it had also been achieved. According to the survey and the case study done, the respondents had given their various opinions and views towards the subject matter. Even though the responds given varied from one person to another, the author believed that the feedbacks obtained are reliable and accurate considering the respondents are all from the contractor's company and the experience and the number of projects that they had been involved with.

As for the recommendation, the author suggested that for further research for the future, the survey need to be in a larger scope. Instead of involving only the contractors, the author believed that by involving the consultants, suppliers and even the clients in the survey, the results obtained will much more reliable, adequate and applicable towards the construction project in Malaysia. Besides that, the author also recommended that the case study should be done not just in one construction project but the scope should be widen to other construction project and to various part of the country to add the validity to the study. Since the first objective of this study had been achieved, it is recommended by the author that the contractor's companies and also the government should start taking action for an effective implementation of human resource management in construction project to increase the performance and the success rate of projects. As for the second objective that had been achieved, the author recommended that the problems involving the human resource management are being taken care of as soon as possible. The author also suggested that the methods to improve the human resource management that had been discussed in the survey to be put into practice by the contractor's company. Given that the feedbacks of the survey come from the contractors themselves, the author strongly believed that the methods are applicable and effective to improve the human resource management in construction project for the betterment of not just the contractors but also for consultants, clients and even the country itself.

REFERENCES

- [1] Sharon M, Philip W, Brenda S, David S, Chris R, Francine W. Developing "new commons" between HRD research and practice Case studies of UK universities. *J Eur Indust Training* 2007; 31(1): 4–18.
- [2] Slotte V, Tynjala P, Hytonen T. How do HRD practitioners describe learning at work? *Human Resour Dev Int* 2004; 7(4):541–4.
- [3] Garavan TN, Morley MJ. Re-dimensionalising boundaries in the theory and practice of Human Resource Development. *Learn Intellect Capital* 2006; 3(1):3–13.
- [4] Liang-Hsuan C, Shu-Yi L, Tzai-Zang L. Using an HRM pattern approach to examine the productivity of manufacturing firms – an empirical study. *Int J Manpower* 2003; 24(3):299–318.
- [5] Lengnick-Hall CA, Lengnick-Hall ML. Strategic human resources management: a review of the literature and a proposed typology. *Acad Manage Rev* 1998; 13(3):454–70.
- [6] Wright PW, Boswell WR. Desegregating HRM: a review and synthesis of micro and macro human resource management research. *J Manage* 2002; 28(3):247–76.
- [7] Gareis R, editor. *Management by projects*. Vienna: Manz; 1990.
- [8] Keegan AE, Turner JR. Managing human resources in the projectbased organization. In: Turner JR, editor. *People in project management*. Aldershot: Gower; 2003. p. 1–12.
- [9] Wright P, McMahan G. Theoretical perspectives for strategic human resource management. *J Manage* 1992; 18(2):295–320.
- [10] Jong Jan A de, Leenders Frieda J, Thijssen Jo GL. HRD tasks of first-level managers. *J Workplace Learning* 1999;11(5):176–83.
- [11] Nesan LJ, Holt GD. *Empowerment in construction: the way forward for performance improvement*. England: Baldock, Hertfordshire, Research Studies Ltd; 1999.
- [12] Tabassi, AA, Abu Bakar AH, (2008). Training, motivation and performance : the case of human resource management in construction projects in Mashdad, Iran, *International Journal of Project Management* 27 (2009) 471-480:3-8