

**HUMAN RESOURCE MANAGEMENT  
IN A  
PROJECT TEAM**

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**A project report submitted in partial fulfilment of the  
requirements for the award of  
Master of Science Project Management**

**Faculty of Engineering and Science  
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## DECLARATION

I hereby declare that this project report is based on my original work except for citations and quotations which have been duly acknowledged. I also declare that it has not been previously and concurrently submitted for any other degree or award at UTAR or other institutions.

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## APPROVAL FOR SUBMISSION

I certify that this project report entitled “**HUMAN RESOURCE MANAGEMENT IN A PROJECT TEAM**” was prepared by **LOW CHEN AUN** has met the required standard for submission in partial fulfilment of the requirements for the award of **MASTER OF SCIENCE (PROJECT MANAGEMENT)** at **Universiti Tunku Abdul Rahman**.

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Specially dedicated to  
my beloved mother and father

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## **HUMAN RESOURCE MANAGEMENT IN A PROJECT TEAM**

### **ABSTRACT**

Project management used to be the activity mainly done by the construction industry, but as time changes, it is slowly becoming more and more popular in other industries such as manufacturing, health care and even research and development. The reason for the incident above is because of the complex demands of the consumer nowadays, so in order to cater to all the needs of the consumer or clients, organizations need to implement project management in their work process. In this research, the project human resource management in project oriented companies from different industries in Malaysia were studied. Although project human resource management is quite similar to the general human resource management but there are still some activities which are different or have to be added into the general human resources management activities. All those activities were studied from the various literatures first and then a research questionnaire was designed to collect data from not only the human resource managers, but for all the employees in the company. Around 200 questionnaires were sent out and only 41 responded, the collected data was analysed to find out what activities had been done most and whether the conclusion can be applied to other samples or not. The result revealed that regardless of the industries

and project duration, the project human resource management activities are similar. Besides that, the result also revealed other aspects such as project size, number of project participants and company annual turnover does affect the Human Resource Management (HRM) activities practiced. Not only that, the relationship between project success and HRM practices are also studied, it showed that there are various activities that may increase or decrease project performance in terms of meeting cost target, meeting technical specification and meeting client expectations. Most of the results are consistent with existing researches done, but not all are like that. From the existing researches, project duration does affect the HRM activities practiced, but in this study, the result showed otherwise. So, further study can be done to obtain a conclusive result.



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**LIST OF SYMBOLS / ABBREVIATIONS**

<i>HR</i>	Human resource
<i>HRM</i>	Human resource management
<i>PMI</i>	Project Management Institute

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## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Background**

The interest in project and project based working is becoming more and more popular in recent years (Gareis, 2005). Nowadays, not only construction company uses it, but many other industries such as information technology, electrical and electronics, oil and gas, and many more. This happens because there is a need for organizations to adopt an appropriate structure to respond to a highly differentiated and customized nature of demands (Sydow et al., 2004). With so many different demands, the organization can no longer cater only to one client, as a result it has to adapt to be able to satisfy all the demands from different clients. Other than that, project management is applied on different industries such as electronics, pharmaceuticals and automotive because it increases the effectiveness of the enterprise in the dynamic market and the mutual responsibility of the supplier and the user of such service are spelled out in a defined-time-horizon contract (Nasim & Zbigniew, 2008). With the technology advancement happening so rapidly, the market of different products becomes dynamic. Ultimately, the organization needs to evolve constantly to cater to the needs of the end users.



Not only on manufacturing, in the R&D industry, the job can also be a complicated task and it usually requires a working team consists of research staffs from several department and companies to design concept and deliver the satisfactory result (Hsiao et al., 2009). Besides plain manufacturing, some big electronics device manufacturer also does research and developments to develop new and more powerful products, examples of those companies are Intel, Sony and other giant MNCs.

Human resources are considered the most important asset of an organization, it contributes to the success of an organization (Huselid, 1995), creates competitive advantages for the organization (Wright & McMahan, 1992), it also affects the employees experience of work and employees relation (Guest, 2002). But very few organizations are able to fully harness its potential (Lado & Wilson, 1994). The companies which failed to harness the potential of human resource management may result in low productivity, high conflict and even high staff turnover. Besides that, HRM can also be viewed as core processes of a project oriented company affecting the way the organization acquires and uses human resources (Huemann et al., 2007). The way the company manages their human resource will ultimately affect the productivity of the company itself, so it is important that a company must manage its human resource carefully.

## **1.2 Problem Statement**

Very little attention had been paid to address the impact of HRM practices on operation management and to generalize the findings across countries and different industries (Ahmad & Schroeder, 2003). The differences in demands may require some operational companies to start adopting project management to handle all their client's demands.

Previous research on HRM only illustrate the process in the project oriented company is familiar to the mainstream HRM practices which may include practices such as recruitment, employment and release (Huemann et al., 2004). But in a project environment, it is not that simple, there are more activities which had not been mentioned such as project human resource selection, project human resource development, project human resource management and project dispersion practices.

## **1.3 Aim and Objectives**

The study aims to investigate the different human resource practices in project teams from various disciplines or industries. This is achieved through the following objectives:

- To study the human resource practices of a project oriented company from the existing literature
- To identify the human resources practices adopted by the companies in reality

- To investigate the differences of the human resource management practices for project in different settings
- To identify the human resource management best practices for project that can be adopted or adapted by other industries or types of project

#### **1.4 Scope of the Research**

In this research, participants from Malaysia regardless of the industries they are involved in were studied to show whether the companies are really practicing any project human resource management activities listed in the literature or not. If so, the degree of involvement in each of the activities.

Then, a questionnaire survey was conducted on multiple recipients from various companies regardless of positions and data were gathered for further in depth study to determine whether companies are implementing the activities listed in the literature or not.

After that, the findings were analyzed and conclusions were made after the research to determine which activities are done most intensively and to test whether the conclusion of the research can be applied to a broader population.

## **1.5 Significance of the Research**

The research is to show the different human resource practices in a project oriented companies. There are many activities listed in the literature but we do not know for sure whether the companies out there really implement those activities in the literature or not so via this research, we will find out which activities are being done the most by the companies.

The research also means to reveal whether the activities done by the companies will affect the performance of the company or not. By using the questionnaire, data such as the turnover of the company can be collected, so by analyzing the data collected we can find out which company have high turnover and which activity has been done most often by those companies which have high turnover.

It may also show whether the conclusion from the research is able to be applied to another population or not. By using inferential analysis, we can find out whether the conclusion can be applied to other population or not.

## **1.6 Research Methodology**

Research started with literature review to gather information from existing materials such as books or journals.

Data collection was done with an online questionnaire survey where the respondents will be asked to rate the extent to which human resource activities was adopted by the firms. Likert scale was used for this purpose. Besides that, the questionnaires had been distributed out to recipients of any position in various industries such as manufacturing, construction, healthcare and more.

The collected data were analyzed using Spearman's correlation coefficient and Kruskal-Wallis. Spearman's correlation was used to find out the relationship between activities and success factors whereas Kruskal-Wallis was used to find out the differences in terms of HRM activities performed between groups of respondents.

## **1.7 Structure of the Dissertation**

The dissertation is separated into five chapters.

Chapter 1 is the introductory chapter that indicates the problem under study, its importance, validity and the research methodology. It defines the context, the research questions to be answered, the objectives to be achieved and the significance of the study. The topics included in this chapter are, introduction, problem statement, research questions, aim, objectives, scope of the research, significance of the research, research methodology, structure of the dissertation, milestone and scheduling and finally summary.

Chapter 2 is the literature review. The literature review contains information from the survey of scholarly articles, books and other sources such as dissertations, and conference papers which are relevant to a particular issue, area of research, or theory. This section is important as it is meant to act as a base for the experimental or analytical section of the thesis.

Chapter 3 includes the research methodology. This section is organized into different subheadings which include the different ways the research is carried out, the descriptions of the participants, and the analysis method for the obtained data.

Chapter 4 covers the results and analysis. The data collected from the survey is shown in tabulated form for easy understanding, and analysed with SPSS to find out the relationship and differences in the collected data.

Lastly, Chapter 5 covers the discussion and conclusion of the research. The final result from the research is presented with a final conclusion.

## **1.8 Summary**

As a conclusion, this chapter covers the basic introduction about the different human resources activities in a project oriented company and the benefit of a good human resource management. Other than that, the research also studies the human resource management particularly in the project oriented company and is aimed to determine whether the activities listed in the literature are really being done by companies to manage their human resource. Lastly, this research should contribute some significance in the existing knowledge base.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter discusses the topics which had been studied for the research. The important topics regarding the research include, what are the features of a project oriented company, the four basic features that separates a project oriented company to a normal non project oriented company. Next, it is the specific requirements for HRM in a project oriented company. After that is the human resources activities in a project oriented company which includes the three most basic ones like assignment to a project, engagement to the project and dispersion after project is finished. Then lastly, PMBOK guide to project team management, this includes the activities which are listed in the PMBOK guide.

#### **2.2 Project Oriented Company**

Project is slowly becoming more popular in any industry (Söderlund & Bredin, 2006). The reason for this phenomenon is due to the rising of differentiated and customized nature of demands (Sydow et al., 2004). Even for certain operation based industries has also started to utilize project management as a growing part of their operation



(Sydow et al., 2004). Example of the above company would be some original equipment manufacturer which will produce a certain customized product for the clients.

The several features of a project-oriented company include (Schuler, 1996):

- Temporary work processes
- Dynamic work environment
- Project portfolio resource and demands
- Specific management paradigm

### **2.2.1 Temporary Work Processes**

Project oriented company uses temporary organization to perform work, thus every time a new project or a program starts or end, the human resource configuration of the organization will changes as well (Turner et al., 2008). The activities involved might also create pressure for the employees involved (Huemann et al., 2007). As a result of this new HRM practices will be created to handle this situation where the personnel in the company keep changing. Turner (2008) also suggested the different activities that may be needed to handle the situation above, which include practices such as assigning personnel to project, assessing the performance of the team members, developing and rewarding their work on projects, dispersing them on project completion and finally linking projects assignments to careers.

### **2.2.2 Dynamic Work Environment**

As Discussed above the environment in the workplace changes whenever a project has been started or finished, thus this creates a dynamic work boundary and context which may affect the motivation and increase stress to the project worker (Gällstedt, 2003). Besides that the number and the sizes of projects performed varies according to different situations, and there may be permanent or temporary human resources employed to cooperate with the team and virtual teams may be formed to achieve the purpose (Gareis, 1990; Sydow, 2004). The degree of dynamism also depends on the nature of the industries, for industries like construction which have a long project duration, the dynamism will be less compared to an IT development project with a shorter project duration (Nuemann, 2007). The number and size of projects performed can constantly change, making prediction of future resources difficult too (Blichfeldt, 2007).

### **2.2.3 Project Portfolio Resource and Demands**

A big organization may hold a portfolio of internal and external project at the same time (PMI, 2004; Gareis, 2005). Thus a person in a company may need to work in different project at the same time playing a different role, this may create role conflict issue at an individual level (Rau, 2002). So there will be challenges for the HRM to tackle the issues arises from multiresources allocation (Eskerod, 1998; Zika-Viktorsson, 2006). Failure to plan may causes resources to be lost thus effective planning is important, besides that, an effective HRM plan needs to be established to ensure that conflicts can be solved faster, saving time and money.

#### **2.2.4 Specific Management Paradigm**

In any organization, there will be a specific management culture related to handle things such as the empowerment of the employees, process orientation, teamwork, continuous and discontinuous organizational change, customer orientation and networking with clients and suppliers (Gareis, 2005). Different company have different culture, thus newly employed personnel needs to be exposed to the culture through induction process for them to learn how to handle certain people, how things are done, and to allow the employee to know what to expect. So that the employees can work well together in project teams.

#### **2.3 Features that a Project Oriented Company should have**

Organizations can vary in many different criteria such as the degree of project orientation, the number and types of project carried out, the size of the project, the type of projects (Huemann et al., 2007).

The employees in a project oriented company are the ones who (Gareis, 1990):

- Define “management by projects” as their organizational strategy;
- Apply projects and programs for the performance of complex processes;
- Manage a project portfolio of different internal and external project types;
- Have specific permanent organizations like a project portfolio group, or a PM office to provide integrative functions;
- View the organization as being project-oriented.

Project companies are often described as flat organization with a strong project management culture, and perceive themselves as being project oriented and shape their policy and practices of work, organizational culture for strategy towards the challenge from managing projects (Huemann et al., 2007). But not all companies are totally project oriented, for some such as a manufacturing company they do not apply project strategy on all the operations work but on the development department where they develop new strategies or method of production which can improve the production processes.

#### **2.4 Human Resource Activities in the Project Oriented Company**

HRM in a project orientated company has a similar model compared to the general HRM model, which consists of recruitment, employment and release, the only difference is there are additional HRM processes in a project oriented company which includes, assignment to project, engagement to project and dispersion after project (Huemann et al., 2007). The employees which resides in the company needs to be assigned to a certain project and then to be developed or managed in the engagement stage then lastly the dispersion process is to determine what to do with the employees after the project is finished.

Activities include (Huemann et al., 2007):

- Assignment to project
- Engagement on project

- Dispersion after project

#### **2.4.1 Assignment to Project**

This process is similar to an organization recruitment process where employees in an organization are assigned to a project and their pose in the project team are determined (Huemann et al., 2007). This process does not only take place during the start of the project/program, it may also happen during the project life cycle (Eskerod & Blichfeldt, 2005). Some company may also let their employees voluntarily respond to the internally advertised project, giving more freedom to the employees to choose what they want to do (Eskerod & Jepsen, 2005). Besides that, a project team is not complete without a project manager to lead the team, thus it is important that a good project manager must be chosen carefully to lead the project team. Similarly to the selection practices, the project manager may be pre-assigned, hired from other organization or nominated by the team members themselves.

#### **2.4.2 Engagement on Project**

The success or failure of a project is strongly linked to the leadership function of the project manager (Raiden, 2004). Besides that, the project owner also needs to ensure the employees have the chance to develop new skills via training on the job, feedback and more (Huemann et al., 2004). Additionally, both parties above should also have duties for the care of the team members such as project appraisal and support for career development (Huemann et al., 2007). Not only that, the project manager also may rotate work assignment among team members so that everyone

gets the exposure on the different work and to learn something new from the experience. Seminar and courses from external companies are also one of the tools which can be used to develop the team members as they will be able to learn new things, to refresh old skills and also gain state of the art information about various topics.

### **2.4.3 Dispersion after Project**

This process is similar to the release of human resources from the parent organization (Huemann et al., 2007). At this point the organization needs to decide whether the employee will be immediately assigned to a new project, assign to a project starting sometime in the future where their skill will be better used, or to held in abeyance because there is no project got them to be assigned to (Huemann et al., 2004). Besides that, at the end of the project, core worker should be debriefed about their experiences and counselled about the future, if they do not have another project to go they can go through training or personal development, involve in training (Huemann et al., 2007).

## **2.5 PMBOK Guide to Project Team Management**

Project human resource management is mainly about the organization, management and leading the human resources involved in a project, and such project team are normally comprise of people with assigned roles and responsibilities for completing the project (PMBOK, 2008).

The overview of the project human resources management process is as follow:

- Develop human resource plan
- Acquire project team
- Develop project team
- Manage project team

### **2.5.1 Develop human resource plan**

This is the process of identifying and documenting project roles, responsibilities and required skills, reporting relationship and creating a staffing plan (PMBOK, 2008). Besides that, for larger projects, employee's workload are also planned to ensure that project can be done on time with the least pressure on employees (Turner et al., 2008). The tools involved in this process are organizational charts, networking and organizational theory (PMBOK, 2008). Due to the nature of this process is highly related to the management and the survey will be targeted towards all level of employees in the company, the contents from this section were not included in the survey questionnaire.

### **2.5.2 Acquire project team**

This is the process of gathering the personnel required in the project. It starts by confirming human resource availability and then obtaining the necessary team to complete the project assignment (PMBOK, 2008). Team members selected should

complement each other's strength and weaknesses, and a good team should be composed of members with different and specialized value, interest and capabilities (Haque et al., 2000). Besides that formation of teams also require consideration of innate tendencies, interpersonal skills and technical skills (Fitzpatrick & Askin, 2005). Therefore to manage selection and allocation may be very difficult and can lead the manager to form a team which is not optimum for a given situation (e Silva & Costa, 2012).

#### **2.5.2.1 Negotiation**

Staff assignment are negotiated with the respective staff to ensure the project receives competent staff in the required time frame and the team members are able to work on the project until completion, or to assign a member with the appropriate technical skills needed in the project (PMBOK, 2008). This is important because human plays a fundamental role in projects and they are the one who will determine the quality and the productivity of a project (Chan et al., 2008).

#### **2.5.2.2 Pre-assignment**

Project team member selected in advance, this may occur if the project is the result of specific people being promised as part of a competitive proposal or the project is dependent upon the expertise of a particular person (PMBOK, 2008). Clearly defining responsibilities will help keep the project on budget as well as on schedule too (Papke-Shields et al., 2010). Besides, if the project manager were to be nominated by team members in a project, favouritism might occur, and it may lead to



inefficient decisions and loss of motivation and productivity (Albright & Carr, 1997). Pre-assignment is also important to reduce conflict, because when role conflict happens, it may cause damage to project work (Rau & Hyland, 2002).

### **2.5.2.3 Procurement**

Done when the performing organization lack the in-house staff needed to complete a project, thus services from outside source may be acquired to complete the project (PMBOK, 2008). For projects which are complex, employees may be procured from other companies or from other location according to the procurement options, client's characteristics, project requirements and external environments (Luu et al., 2003). Besides that, off shoring procurement may be used to save cost (Dowling et al., 2008). The usage of employees from countries like China or Vietnam may help lower the cost of operation.

### **2.5.2.4 Virtual Teams**

The usage of electronic communication such as e-mail, audio conferencing, web based meetings and video conferencing, because project members are dispersed in a large geographical area, a special expert is not in the same area, employees work from home, team members who work in different shifts or hours, project member with mobility limitation or disability or travel expense is too high (PMBOK, 2008). The usage of email and intranet in a company may bring many benefits to both employees and organizations, example of it includes cost saving, improved decisions and business processes (Rahim & Singh, 2006). Besides that virtual teams can share

skills or core competencies and resources to better respond to business opportunities, all with the support of computer networks (Camarinha-Matos & Afsarmanesh, 2001). Lee-Kelley and Sankey (2008) also stated that for large scale projects, workers may be hired to work at a different location to form a virtual team.

### **2.5.3 Team Development**

Develop Project Team involves the process of improving the performance of the team by encouraging team interaction and improving the team environment (PMBOK, 2008). This is also true in other HRM literature which recognizes the the necessity of career development programs in today's dynamic organizational environment (Turner et al., 2003). Companies with low annual turnover may be less involved in trainings and does not encourage their employees to join external seminar/courses because those training activities involve high expenses and time consuming, as a result the company is unable to play an important role in developing the employees (Tabassi & Bakar, 2009).

#### **2.5.3.1 Team Building**

Team building events is associated with several success dimensions and has positive effect on project performance (Jones & Harrison, 1996). There is a wide range of methods which may be implemented to improve team cohesion and quality, which will help in providing a higher quality deliverables (Sahin, 2010). It can vary from a five minutes agenda item in a status review meeting to an offsite, professionally

facilitated experience designed to improve interpersonal relationships, can ultimately help in building trust and establishing good working relationships (PMBOK, 2008).

### **2.5.3.2 Training**

Activities which are designed to enhance the competencies of the project team members, may be formal or informal. Examples include classroom, online, computer based, on the job training, mentoring and coaching (PMBOK, 2008). Similarly mentioned by Ng (2005), training of worker can be through formal on-the-job training, formal off-the-job training as well, but the ultimate goal is still to raise the productivity of the workers. Xiao and Tsang (1999) also found evidences that training is also currently being used in more firms to develop the employees' skills. On the job training may help increase the quality of work and help producing deliverables at a competitive cost (Creth, 1986). Off the job training, which includes classroom lectures and seminars or courses, can be used effectively to develop technical and problem solving skills (Tabassi & Bakar, 2009). Not only classroom training, computer based training may also helps develop technical skills of the employees. Computer based training can help to save cost compared to live on-site instruction which may include several fixed cost such as instructor wages, classroom expenses, travel fees and variable costs such as student materials (Blakenhorn, 1999). But, depending on the situation, computer based training may not always be the least cost-effective way to go (Janicak, 1999). As the number of participants increases, the cost will also rise exponentially, so managers must choose the correct method to train their employees in the most cost effective way.

### **2.5.3.3 Ground Rules**

The establishment of clear expectation regarding acceptable behavior by project team member to avoid misunderstanding and increases productivity, and to allow the members to discover values that are important to one another (PMBOK, 2008). This type of arrangement will also helps ensure the project is on budget and schedule as well because responsibilities of each members are clearly defined (Papke-Shields et al., 2010).

### **2.5.3.4 Collocation**

The placement of many or all project team members in the same physical location to enhance their ability to perform as a team, and this may be done temporarily during critical times or for the entire project (PMBOK, 2008). Not only that, collocation also will help produce a more coherent and better quality final product as the quality of the final product reflects the level of mutual engagement between participants (Bryan-Kinns, 2012).

### **2.5.3.5 Reward and Recognition System**

To recognize and reward desirable behavior, award decisions are made formally or informally during the process of managing the project team through project performance appraisal. May be in form of tangible (money) or non tangible (opportunity to grow, accomplish, and apply their professional skills to meet new challenges) objects (PMBOK, 2008). Other studies also showed that organizations

which uses reward system to motivate their employees and result in increase of performance of them (Güngör, 2011).

#### **2.5.4 Manage Project Team**

Manage project team is the process of tracking team performance, providing feedback and resolve conflict and changes to optimize team performance (PMBOK, 2008).

##### **2.5.4.1 Observation and Conversation**

Observation and conversation are used to keep in touch with the work and attitudes of the project team member, observation to monitor the progress towards project deliverables and conversation is to solve interpersonal issues (PMBOK, 2008). Some project managers may be reticent to engage their teams in conversation unless is official project business, this way it is difficult to understand a team member's attitude or viewpoint towards the project and will not be able to establish the feeling of trust and camaraderie (Heldman, 2011). Besides that, with constant monitoring, the progress of the project, information about the budget, schedule and quality is obtained from the feedback of the project team members, and the feedback can be used to increase the accountability of the members and motivate them to perform more diligently (Bergen et al., 1992). The information obtained from monitoring can also be used to guide corrective action (Al-Jibouri, 2003).

#### **2.5.4.2 Project Performance Appraisal**

Performance appraisal during the project period may include clarification of roles and responsibilities, constructive feedback to team members, development of individual training plans and establishment of specific goal for future (PMBOK, 2008). Besides that, human resource performance appraisal will lead to the creation of a training and development schedule for the employee (Lee-Kelley & Blackman, 2011). This can help improve the performance of the employees because managers will know the weakness of the employee and will be able to train them according to their weakness. Not only that, appraised employees can be selected to join different levels of trainings to help save cost (Cifalino & Baraldi, 2009). Normally, the process of appraisal in organization relies on the use of numerical ratings, a proven yet relatively reliable in this process (Brutus, 2010).

#### **2.5.4.3 Conflict Management**

Conflict management often represents the greatest opportunity for cost control in the next century (Slaikeu & Hasson, 1998; Cram & MacWilliams, 2008). It may be induced from scarce of resources, scheduling priorities and personal work styles, and may reduce productivity and causes negative working relationship, thus successful conflict management is important because it will lead to increase creativity and better decision making (PMBOK, 2008). For some company, a formal mechanism called conflict management strategy will be used to resolve a conflict and it may include mechanism such as negotiation, arbitration or mediation (Jameson, 1999). For other companies, negotiating may be the most cost effective method to solve conflict (Buss, 2009), as it does not require a great amount of resources. Besides that, Hendrix et al.

(1998) states a multi project situation causes problems in the allocation of scarce human resources to a diversified project portfolio. Not only that, a personality conflict between two high performing experts may reduce overall project output Verma (1998). So it is vital conflict must be solve properly to ensure project output are not affected.

#### **2.5.4.4 Issue Log**

During the course of the project, the issues arises will be logged in a written document to help monitor who is responsible for resolving specific issues by a target date (PMBOK, 2008). This way, the issues related to the project is documented and all issues reported will be addressed, missing out an issue may affect the project deliverables thus this is important in meeting the clients' expectation. Besides that, the employee who are responsible for resolving a specific issue will be written down in black and white in the issue log, this will increase the accountability of the members and motivate them to perform more diligently (Bergen et al., 1992).

## **2.6 Summary**

There are a lot of studies being done on human resource management and project human resource management. According to Huemann et al. (2007) project human resource activities includes assignment to project, engagement on project and dispersion after project. Whereas for the Project Management Institute (PMI), their version of project human resource management activities includes develop human resource plan, acquire project team, develop project team and manage project team.

There are some similarities and some differences between the two. Assignment to project is found to be similar to acquire project team. They emphasize on the activities of gathering human resources to form a project team. Next, Huemann's engagement on project is similar to PMI's develop project team and management of project team which emphasize on the development of the team members and managing the team members during the course of the project. There is also differences between both sides, Huemann's literature includes the project dispersion activities, this is absent in the PMI's literature.



## **CHAPTER 3**

### **METHODOLOGY**

#### **3.1 Introduction**

This chapter includes the information about the data collection method and the research methods which were used to analyze the data collected.

#### **3.2 Literature review**

Literature review is the use of database reports of primary or original scholarship and does not report new primary scholarship itself (Cooper, 1988).

To determine the current human resource activities performed, an extensive literature review was conducted. The first phase of the review was to find any relevant materials for the research, there are many aspects of project human resource management that are similar to general human resource management. Therefore, the information gathered on the latter should be, to an extent, applicable to the former, so the search starts there, the non relevant materials are slowly removed from the list. But that is not sufficient, so specialized materials which talks about project human

resource management were studied as well. Besides journal papers, books are also reviewed in the literature review for this research.

### **3.3 Research Questionnaire**

The research questionnaire contains 10 questions. Question 1 is the demographic question which asks for the name of the recipient, email address and phone number. Question 2 asked for the position of the recipient whereas for question 3, it is used to find out the industry of the recipient. Question 4 and 5 asked for the question and company details. Question 3,4 and 5 are used to find out whether there are any differences in activities practiced by different industries, companies of different turnover, project of different sizes, project with different number of members and project of different durations. Next, for question 6, 7, 8 and 9, the recipients are asked to rank the frequency of activities which are being practiced in their company, this is used in conjunction with question 3,4 and 5 to investigate the differences of the human resource management practices for project in different settings. Lastly, question 10 is about the goal that must be met to measure the success of the project, the recipient is asked to rank a few success measures, this is to find out the goal that they need to meet to ensure their project are successful. And it will be analysed with question 6,7,8 and 9 to identify the human resource management best practices for project that can be adopted or adapted by other industries or types of project

Besides that, the questionnaire is targeted towards all the employees in an organization; it is not only for the human resource managers. This will enable more responses from the questionnaire because the target audience is bigger.

### **3.4 Online Survey**

Online survey will be the primary method of data collection for this research. In the modern world nowadays, most society already has internet access (Scholl et al., 2002), so the internet will be a great tool to obtain information from respondents living in different parts of the world at a minimal cost.

Besides that, online surveys are also quite flexible they can be conducted in several formats, email with embedded survey, visits to a website by an internet surfer or can be in plain text of html (Schonlau et al., 2001). Not only that, online survey is very time efficient, it minimizes the period it takes to send out a survey into the field for data collection (Evans & Mathur, 2005). With the usage of internet the communication is real time and fast, so when a respondent submits a completed questionnaire, the researcher is able to receive it almost immediately. The responses from online questionnaire are in digital form, this allows ease of data entry and analysis especially when the researcher needs to tabulate and analyze the responses using computer software (Evans & Mathur, 2005). The researcher does not need to collect each responses back and slowly input the data into the computer one by one it lighten the burden of the researcher as the researcher instantaneously has all the data stored in a database for analysis (Wilson & Laskey, 2003).

### **3.5 Spearman's Ranking**

Spearman's correlation coefficient is a non parametric statistics, thus it can be used when the data are not normally distributed (Field, 2005). In addition, Naoum (2007) also stated that Spearman's ranking can be applied for measuring the difference in ranking between two groups of respondents scoring a number of issues, attributes or factors. The data collected from the survey are non-parametric data, that is why Spearman's Ranking is chosen to be one of the analysis method for this research.

Since Spearman's correlation coefficient is used to see the differences between two sets of data; the test can be one-tailed or two-tailed. One-tailed is used when there is a directional hypothesis, whereas two-tailed is used when the researcher cannot predict the nature of the relationship (Field, 2005). In this research, two-tailed test will be used to analyse the data because the relationship cannot be predicted.

The result from the test may be positive or negative, if there is a positive relationship that means that both variables will increase as the other increases, or decrease as the other decreases (Naoum, 2007). In contrast, if the relationship is negative, one variable may increase and the other may decreases, and vice versa (Naoum, 2007). Not only that, the result will also shows the confidence level for the relationship, normally values below 0.05 are accepted as being statistically meaningful (Field, 2005).

In this research, Spearman's correlation coefficient will be used to determine the relationship between the activities done and the project success factor. The relationship between the above items will show which activity affects which success factor and from there, we will discover which activity can be done more to ensure a better chance of achieving a certain success criteria (to meet the fourth objective).

### **3.6 Kruskal-Wallis**

Similar to Spearman's correlation coefficient, Kruskal-Wallis is a test which can only be used on non-normally distributed data or non-parametric data only (Field, 2005). This test is based on the ranks of the data, and useful in comparing responses among three or more groups of recipients using samples of non-normally distributed response data (Walker, 2002). Due to the nature that the data collected are non-parametric data, Kruskal-Wallis is used to analyse the data.

The crucial thing to look from the result of this test is the significant value, the value indicates that there is significant difference between the group of participants (Field, 2005). The significant value will also indicate the level of confidence and only values of less than 0.5 is considered as significant (Field, 2005).

In this research, Kruskal-Wallis will be used to compare the activities done by various groups of recipients, so that we can find out which activities are most likely to be practiced by what type of populations (to meet the third objective).

### **3.7 Cronbach's Alpha**

Cronbach's Alpha is used in this research to test the reliability of the data from the questionnaire. The data will be splitted in two in every possible way and the correlation coefficient for each split will be calculated and the average of those values is equivalent to Cronbach's alpha (Cronbach, 1951). The value obtained from this test needs to be higher than 0.7 to indicate that the data obtained is reliable (Field, 2005).

## CHAPTER 4

### ANALYSIS AND DISCUSSION

#### 4.1 Introduction

This chapter assesses the current project human resource practices among the different types of industry in Malaysia. Table 4.1.1 shows the distribution of the total 41 participants of various industries in Malaysia. There are 8 choices for the participants to choose from and the “other” category consists of government sector, education, leisure industry, advertising, media and legal.

Table 4.1.1: Number of participants from various industries

Industry	No. of participants
Manufacturing	12
Healthcare and pharmaceuticals	6
Financials	3
Information technology	2
Construction(developer)	2
Construction (contractor)	4
Construction(consultant)	2

Other	10
Total	41

Table 4.1.2 shows the distribution of the project size of the participants.

Table 4.2.2: Size of the Projects the Participants Involved in

Project Size	No. of participants
Less than RM100,000	14
RM100,001 – RM500,000	9
RM500,001 – RM1,000,000	4
RM1,000,001 – RM5,000,000	4
RM5,000,001 – RM10,000,000	3
RM10,000,001 – RM50,000,000	4
More than RM50,000,001	3
Total	41

Table 4.1.3 shows the distribution of the project duration of the participants.



Table 4.3.3: Duration of the Projects the Participants Involved in

Project Duration	No. of participants
Less than 3 months	9
4 – 10 months	14
11 – 24 months	12
25 – 36 months	3
More than 36 months	3
Total	41

Table 4.1.4 shows the distribution of the total number of project participants involved in the same project with the participants.

Table 4.4.4: Total Number of Participants in the Project

No. of project participants	No. of participants
1 – 5	19
6 – 10	5
11 – 30	12
More than 31	5
Total	41

Table 4.1.5 shows the distribution of the annual turnover for the companies of the participants.

Table 4.5.5: Annual turnover of the Participant's Company

Project Size	No. of participants
Less than RM50,000	10
RM50,001 – RM500,000	6
RM500,001 – RM10,000,000	11
RM10,000,001 – RM30,000,000	6
More than RM30,000,001	8
<b>Total</b>	<b>41</b>

Next, table 4.1.6 shows the use of various activities in the listed activities. From the table, we can deduce that the activities in project team management has been done most often, next is project team member development activities, and follow with project team member selection and project dispersion activities.

Table 4.1.6: Frequency of practice for each activity

Group	Activity	Average Use	Mean	Std. Dev
Project team member selection	Q6.1	3.05	<b>2.057</b>	0.872
	Q6.2	1.88		
	Q6.3	1.39		
	Q6.4	2.46		
	Q6.5	3.24		
	Q6.6	1.39		
	Q6.7	1.80		
	Q6.8	3.22		
	Q6.9	1.12		
	Q6.10	1.02		
Project team member development	Q7.1	2.17	<b>2.30</b>	0.181
	Q7.2	2.54		
	Q7.3	2.27		

	Q7.4	2.17		
	Q7.5	2.41		
	Q7.6	2.15		
	Q7.7	2.63		
	Q7.8	2.20		
	Q7.9	2.17		
Project team member management	Q8.1	2.73	<b>2.81</b>	0.421
	Q8.2	3.41		
	Q8.3	3.12		
	Q8.4	2.41		
	Q8.5	3.32		
	Q8.6	2.32		
	Q8.7	2.51		
	Q8.8	2.63		
Project dispersion	Q9.1	2.15	<b>1.71</b>	0.295
	Q9.2	1.66		
	Q9.3	1.71		
	Q9.4	1.73		
	Q9.5	1.32		

## 4.2 Reliability Test

Before starting the analysis, the data collected from the questionnaire survey are tested with Chronbach's Alpha to measure the reliability of the data. The output from the test is shown in table 4.2 below. The table shows that the Chronbach's Alpha value is 0.916 which indicates a high level of internal consistency.

Table 4.2: Reliability test

Reliability Statistics	
Cronbach's Alpha	N of Items
.916	41

### 4.3 Human Resource Management in Different Industries

Kruskal-Wallis test is performed to see whether the industries involved in this study are doing the same project human resource activities or not. Table 4.3 shows the result from the Kruskal-Wallis test. From the table we can deduce that there are no significant differences in the HRM activities done by various industries because the p value for each activity is bigger than 0.05.

Table 4.3: Differences in all the HRM activities with regard to the industry

Activity	Type of industry		Activity	Type of industry	
	Chi square	p value		Chi square	p value
Q6.1	4.669	0.700	Q7.7	5.663	0.580
Q6.2	7.114	0.417	Q7.8	6.703	0.460
Q6.3	2.482	0.928	Q7.9	9.023	0.251
Q6.4	4.115	0.766	Q8.1	5.721	0.573
Q6.5	8.028	0.330	Q8.2	8.300	0.307
Q6.6	3.240	0.862	Q8.3	9.368	0.227
Q6.7	3.665	0.817	Q8.4	3.668	0.817
Q6.8	9.869	0.196	Q8.5	9.131	0.243
Q6.9	10.718	0.151	Q8.6	1.919	0.964
Q6.10	7.898	0.342	Q8.7	7.332	0.395
Q7.1	4.143	0.763	Q8.8	4.102	0.768
Q7.2	1.637	0.977	Q9.1	10.189	0.178
Q7.3	6.009	0.539	Q9.2	6.258	0.510
Q7.4	8.611	0.282	Q9.3	5.282	0.626
Q7.5	2.372	0.936	Q9.4	6.253	0.511
Q7.6	2.394	0.935	Q9.5	3.250	0.861

### 4.4 Human Resources Management in Projects of Various Sizes

Since that there are no significant differences between industries above, the project size of the participants will be tested to see whether participants of different project

size are practicing the same activities or not. Table 4.4 shows the result from the Kruskal-Wallis test. From the table, there are differences at Q7.9 contributions are rewarded with promotion ( $p = 0.032$ ), Q9.1 debriefing after the completion of project ( $p = 0.013$ ) and Q9.2 counselling provided on job opportunities available in the company ( $p = 0.013$ ). The mean rank from the Kruskal-Wallis test suggested that reward with promotion ( $m = 35.67$ ) is more likely to be done when the project size is more than 50 million. Besides that, debriefing after project ( $m = 37.50$ ) and counselling for job opportunities after project completion ( $m = 34.67$ ) also will be more likely to happen if the project size exceeds 50 million.

Table 4.4: Differences in all the HRM activities with regard to project size

Activity	Project size		Activity	Project size	
	Chi square	p value		Chi square	p value
Q6.1	3.430	0.753	Q7.7	10.548	0.103
Q6.2	1.125	0.980	Q7.8	6.809	0.339
Q6.3	1.915	0.924	Q7.9	13.833	<b>0.032</b>
Q6.4	5.765	0.450	Q8.1	4.243	0.644
Q6.5	7.198	0.303	Q8.2	1.946	0.925
Q6.6	8.817	0.184	Q8.3	2.634	0.854
Q6.7	9.088	0.169	Q8.4	6.066	0.416
Q6.8	5.291	0.518	Q8.5	4.065	0.668
Q6.9	7.238	0.299	Q8.6	5.564	0.474
Q6.10	8.038	0.235	Q8.7	6.169	0.405
Q7.1	8.177	0.225	Q8.8	5.793	0.447
Q7.2	4.504	0.609	Q9.1	16.061	<b>0.013</b>
Q7.3	9.191	0.163	Q9.2	16.152	<b>0.013</b>
Q7.4	7.659	0.264	Q9.3	10.904	0.091
Q7.5	11.195	0.083	Q9.4	10.320	0.112
Q7.6	8.341	0.214	Q9.5	8.942	0.117

#### 4.5 Human Resources Management in Projects of Different Duration

Next, we go on to find out whether project duration of various projects in this study are practicing the same project human resource activities or not. Table 4.5 shows the result from the Kruskal-Wallis test. There was no significant difference in project HRM activities done at project which spans on different durations.

Table 4.5: Differences in all the HRM activities with regard to project duration

Activity	Project duration		Activity	Project duration	
	Chi square	p value		Chi square	p value
Q6.1	1.234	0.873	Q7.7	2.438	0.656
Q6.2	3.818	0.431	Q7.8	2.883	0.578
Q6.3	3.777	0.437	Q7.9	4.631	0.333
Q6.4	5.013	0.286	Q8.1	4.587	0.332
Q6.5	6.943	0.139	Q8.2	1.404	0.844
Q6.6	5.701	0.223	Q8.3	1.471	0.832
Q6.7	2.126	0.713	Q8.4	5.753	0.218
Q6.8	3.523	0.474	Q8.5	2.891	0.576
Q6.9	5.847	0.211	Q8.6	1.669	0.796
Q6.10	8.773	0.067	Q8.7	8.803	0.066
Q7.1	1.237	0.872	Q8.8	2.738	0.603
Q7.2	5.231	0.264	Q9.1	9.496	0.050
Q7.3	6.699	0.153	Q9.2	5.542	0.236
Q7.4	2.027	0.731	Q9.3	6.944	0.139
Q7.5	0.249	0.993	Q9.4	8.052	0.090
Q7.6	2.273	0.686	Q9.5	6.600	0.159

#### 4.6 Human Resources Management in Projects with Different Number of Participants

Next, we analyse the number of participants to the activities performed to see whether the number of participants will affect the activities done or not. Table 4.6

shows the result from the analysis. From the table, there are difference on Q6.4 negotiation with the staff to ensure project gets competent staff ( $p = 0.023$ ), Q6.7 employees from a far off location may be hired ( $p = 0.010$ ), Q7.4 non computer based classroom training provided ( $p = 0.002$ ), Q7.9 contributions are recognized with promotion ( $p = 0.008$ ) and Q9.5 team members are held abeyance if there is no work in the near future ( $p = 0.036$ ). The mean rank from the analysis suggest that negotiation with staff to ensure project gets competent staff ( $m = 28.67$ ), and the activity of holding team members at abeyance if there is no work ( $m = 28.54$ ), is most likely to happen with a 11-30 person team. At a project team with more than 31 participants, the employees are more likely to get hired from a far off location ( $m = 27.40$ ), have non computer based classroom training ( $m = 32.50$ ) and contributions of capable employees are more likely to get recognized with promotions ( $m = 31.50$ ).

Table 4.6: Differences in all the HRM activities with regard to number of project participants

Activity	No. of project participants		Activity	No. of Project participants	
	Chi square	p value		Chi square	p value
Q6.1	2.499	0.475	Q7.7	5.630	0.131
Q6.2	2.595	0.458	Q7.8	4.893	0.180
Q6.3	4.950	0.175	Q7.9	11.776	<b>0.008</b>
Q6.4	9.503	<b>0.023</b>	Q8.1	5.127	0.157
Q6.5	6.888	0.076	Q8.2	2.400	0.494
Q6.6	7.383	0.061	Q8.3	1.990	0.575
Q6.7	11.352	<b>0.010</b>	Q8.4	2.631	0.452
Q6.8	2.942	0.401	Q8.5	4.013	0.260
Q6.9	1.526	0.676	Q8.6	4.730	0.193
Q6.10	1.118	0.773	Q8.7	4.699	0.195
Q7.1	6.850	0.077	Q8.8	3.531	0.317
Q7.2	4.053	0.256	Q9.1	4.911	0.178
Q7.3	7.717	0.052	Q9.2	6.722	0.081

Q7.4	14.590	<b>0.002</b>	Q9.3	7.787	0.051
Q7.5	2.080	0.556	Q9.4	5.283	0.152
Q7.6	1.398	0.706	Q9.5	8.532	<b>0.036</b>

#### **4.7 Human Resources Management in Companies with Different Annual Turnover**

The annual turnover for each of the participants were recorded and compared to see whether there are any differences between companies with different turnover range. Table 4.7 shows the results of the Kruskal-Wallis test, there are significant difference in Q7.4 non computer based classroom training is provided ( $p = 0.045$ ), Q7.7 team members are encouraged to join external seminars or courses which are useful ( $p = 0.019$ ) and Q8.3 conversation is used to solve interpersonal issues ( $p = 0.026$ ). The mean rank from the analysis suggested that, in low turnover companies of less than RM50, 000 per annum, it is less likely to be involved in activities such as non computer based classroom training ( $m = 16.10$ ) and team members are less likely to be encouraged to join external seminar or courses ( $m = 13.20$ ). Meanwhile, in companies with turnover of RM10, 000,001 – RM30, 000,000 it is more likely to have non computer based classroom training ( $m = 33.92$ ), encourage employees to join external seminar or courses ( $m = 29.00$ ) and used conversation to solve interpersonal issues ( $m = 30.17$ ). Besides that only at companies with over RM30, 000,001 annual turnover, it is less likely that conversation will be used to solve interpersonal issues ( $m = 13.75$ ).



Table 4.7: Differences in all the HRM activities with regard to company annual turnover

Activity	Annual turnover		Activity	Annual turnover	
	Chi square	p value		Chi square	p value
Q6.1	5.105	0.277	Q7.7	11.734	<b>0.019</b>
Q6.2	4.110	0.391	Q7.8	8.841	0.065
Q6.3	3.452	0.485	Q7.9	5.355	0.253
Q6.4	3.719	0.445	Q8.1	1.886	0.757
Q6.5	7.603	0.107	Q8.2	2.518	0.641
Q6.6	8.650	0.070	Q8.3	11.066	<b>0.026</b>
Q6.7	8.536	0.074	Q8.4	4.378	0.357
Q6.8	5.184	0.269	Q8.5	2.703	0.609
Q6.9	6.867	0.143	Q8.6	3.472	0.482
Q6.10	3.125	0.537	Q8.7	1.909	0.752
Q7.1	5.020	0.285	Q8.8	3.581	0.466
Q7.2	5.523	0.238	Q9.1	6.117	0.191
Q7.3	4.712	0.318	Q9.2	2.588	0.629
Q7.4	9.768	<b>0.045</b>	Q9.3	2.609	0.625
Q7.5	6.100	0.192	Q9.4	5.639	0.228
Q7.6	0.853	0.931	Q9.5	1.577	0.813

#### 4.8 Correlations between Activities Performed and Success Factors

Spearman Rank-order correlation test is performed to find out whether the activities performed have relationship with the different success factors or not. Table 4.8.1 below shows that there is positive relationship between Q10.1 meeting cost target with Q6.5 project members are pre-assigned by the management ( $r_s = 0.498$ ), Q7.3 computer based training provided ( $r_s = 0.435$ ), Q8.2 project progress is monitored regularly ( $r_s = 0.403$ ), Q8.3 conversation is used to solve interpersonal issues ( $r_s = 0.422$ ) at 99% level of confidence and Q7.2 on-the-job training provided ( $r_s = 0.352$ ), Q7.4 non computer based classroom training provided ( $r_s = 0.372$ ), Q8.5 electronics communication such as email and intranet is used ( $r_s = 0.350$ ), Q8.7 performance appraisal conducted during the course of project ( $r_s = 0.373$ ), at 95% level of

confidence. In addition, Q10.1 is negatively related to Q9.3 go through training if there is no work at the near future ( $r_s = -0.333$ ) at also 95% level of confidence. For Q10.3 meeting technical specification, it has a positive relationship with Q7.1 team building activities is provided ( $r_s = 0.337$ ) and Q8.8 issues arises is logged in a written document ( $r_s = 0.310$ ) at 95% level of confidence. Besides that, from the table we can also see that there is negative relationship between Q10.4 meeting client expectation and Q6.10 project manager is nominated by team members ( $r_s = -0.341$ ) at 95% level of confidence, Q9.5 team members are held in abeyance if there is no work at the near future ( $r_s = -0.401$ ) at 99% level of confidence.

Table 4.8.1: Relationship between activities performed and success factors

HRM practices		Success Factors		
		Cost Target	Technical Specification	Client Expectation
Project team member selection	Q6.5	.498**		
	Q6.10			-.341*
	Q7.1		.337*	
Project team member development	Q7.2	.352*		
	Q7.3	.435**		
	Q7.4	.372*		
	Q8.2	.403**		
Project team member management	Q8.3	.422**		
	Q8.5	.350*		
	Q8.7	.373*		

	Q8.8		.310*
Project dispersion	Q9.3		-.333*
	Q9.5		-.401**
<hr/>			
N = 41			

\* = correlation is significant at 0.05 level

\*\* = correlation is significant at 0.01 level

#### **4.9 Do Companies Practice Project Human Resource Management?**

From the result gathered, companies in Malaysia are indeed practicing project human resource management. But, the degree of application varies according to different factors such as industry, project size, number of participants in the project, company annual turnover, and total number of employees in the company. The frequency of activities performed also varies between groups as not all the activities are performed equally, activities such as project dispersion are given least attention in a project team which is consistent with Huemann (2007) when he stated that project dispersion is a process which is not widely recognize in the literature or in the HRM.

#### **4.10 Are There Any Factors Which Influence HRM Practice Use?**

According to Crawford and Pollack (2007), there are no differences in PM knowledge between industry sectors. The result from the study is consistent with the researchers, because according to the Kruskal-Wallis test from above, there are no significant difference in activities practices between industries.

However, there are significant differences in HRM practices used according to different context such as project size, project duration, the number of project participants and company turnover which is consistent with what Besner and Hobbs (2006) indicated in their literature.

#### **4.11 The Influence of Project Size on HRM Practice Use**

In addition, the findings from the research provide evidences that bigger and costlier projects of more than 50 million ringgit increases the usage of practices focusing on personnel retention (counselling on job opportunities at the end of the project) and debriefing about their experiences. The experiences gained from larger project may be valuable because bigger, costlier projects may be hard to come by thus company tends to retain, develop and share the experiences of the personnel involved in those projects.

Not only that, Raiden et al. (2004) also stated in their work, promotion may be rewarded to team member who had demonstrated appropriate leadership abilities for project of a bigger scale i.e. construction projects. This is consistent with the finding from the result of this research which showed that for project bigger than RM50 million, personnel are more likely to be rewarded via promotion. Bigger project size may mean bigger responsibility, thus a team member which has the capability to handle the responsibility may be promoted.

#### **4.12 The Influence of Project Duration on HRM Practice Use**

From the result, the duration of which each projects spans does not affect the activities performed by the companies. This is found to be inconsistent with the existing literature by Zwikael and Unger-Aviram (2009), suggest that different project team development practices should be identified for different project types and duration. This means, the project development practices from projects of different duration varies among each other. Since the finding is inconsistent with other researcher, further studies are needed to obtain a conclusive result.

#### **4.13 The Influence of Number of Project Team Members on HRM Practice Use**

The result from the analysis indicated that for project team beyond 31 members, it is more likely that members will be hired from far off location. This is consistent with Lee-Kelley and Sankey (2008) which stated that for large scale projects, workers may be hired to work at a different location to form a virtual team.

Besides that, Tabassi and Bakar (2009) also showed that off the job training such as classroom lecturer may be employed to develop technical and problem solving skills for construction project which may involve a lot of members. This is consistent with the result which indicated that for a project team of more than 31 members, non computer based classroom training is more likely to be conducted. Computer based training may be less cost-effective than a traditional lecture program

as well, depending on the number of people involved in the training, the cost for a lecture program could be cheaper when the group is bigger. It is depending on the situation, computer based training may not always be the least cost-effective way to go (Janicak, 1999).

For a bigger project team such as a construction projects, team members whom had demonstrated appropriate leadership abilities will be promoted via a formal structured performance appraisal system (Raiden et al., 2004). This is consistent with the finding above where a project team of more than 31 people are most likely to have their contribution recognized with promotions. A project with less team members may translate to project of less technical complexity. Besides that, leadership ability is harder to shine when the team lacks members so the chance of promotion will be lesser when teams are smaller.

Human play a fundamental role in projects and they are the one who will determine the quality and the productivity of a project (Chan et al., 2008). Therefore to manage selection and allocation may be very difficult and can lead the manager to form a team which is not optimum for a given situation (e Silva & Costa, 2012). So, negotiation is very important to obtain competent members for the project during the selection process. From the analysis, negotiation with staff to ensure project gets competent staff is most likely to happen for project team which has 11-30 members and second most likely to happen for the group of more than 31 members. This showed that negotiation for competent mostly happens on bigger project (analysis

from this research showed that the number of participants is positively associated with project size so, more project participants means bigger project size) because bigger project are more complex and if the team members are incompetent, the deliverables may get affected.

The activity of holding team members at abeyance if there is no work happens mostly for project team with 11-30 members, this is because the management might not be able to swiftly assign each member to other new project or to involve in other types of activities such as training as there are too many people and not enough tasks available. So team members may be held in abeyance for the time being, to wait for any available task in the future.

#### **4.14 The Influence of Company Annual Turnover on HRM Practice Use**

Companies with low annual turnover are less involved in non computer based training and does not encourage their employees to join external seminar/courses because those training activities involve high expenses and time consuming, as a result the company is unable to play an important role in training labour (Tabassi & Bakar, 2009). In another word, low turnover companies may not focus on developing their employees because they tend to focus more on increasing the turnover only. Thus, like the finding obtained from the respondents, companies with less than RM50, 000 annual turnover are less likely to conduct non computer based classroom trainings, or encourage their employees to join external seminar or courses.

According to Verma (1998), a personality conflict between two high performing experts may reduce overall project output. So for a high turnover company, it is important to maintain the good relationship of employees to prevent reduction of overall project output. Thus, a formal mechanism called conflict management strategy will be used to resolve a conflict and it may include mechanism such as negotiation, arbitration or mediation (Jameson, 1999). As a result of that, the result gathered showed that companies with higher annual turnover of more than RM30.1 million are less likely to rely on conversation (an informal method) only to solve interpersonal issues.

However, for companies with higher annual turnover, off the job training, which includes classroom lectures and seminars or courses, can be used effectively to develop technical and problem solving skills (Tabassi & Bakar, 2009). So, companies with higher turnover may spend some resources to set up more non computer based classroom training and may encourage employees to join external seminars or courses as indicated by the results obtained from the analysis, where companies with turnover of between RM10.1 million to RM30 million are more likely to set up non computer based classroom training and encourage their employees to join external seminar or courses, to increase the performance of the project team.

Not only that, the result also indicated that companies with turnover of between RM10.1 million to RM30 million are more likely to use conversation to solve interpersonal issues. Negotiating may be the most cost effective method to



solve conflict (Buss, 2009) and to maximise turnover, negotiation may be used to solve any interpersonal issues as it will not involve a big amount of resources.

#### **4.15 Relationship between HRM Practices and Meeting Cost Target**

One of the Human Resource (HR) practices associated with the success of reaching cost target is to allow management to pre-assign project members. Because clearly defining responsibilities will help keep the project on budget as well as on schedule (Papke-Shields et al., 2010). When the responsibilities are defined, team members will know what they should or should not do thus eliminating the probability of errors in the project which may cost them money.

Computer based training can help to save cost compared to live on-site instruction which may include several fixed cost such as instructor wages, classroom expenses, travel fees and variable costs such as student materials (Blakenhorn, 1999). This is consistent with the result obtain, where computer based training is positively associated with cost target.

Besides that, the result also showed that non-computer based classroom training also has a positive relationship with meeting the cost target. According to Janicak (1999), computer based training is not always the least cost effective method to develop human resources, the number of people involved in training also affect the cost of the training, for a bigger number of participants, non-computer based

classroom training will be more economical. Thus for companies with bigger number of employees, a non-computer based classroom training can be a more cost effective way to train the employees.

On the job training may help increase the quality of work and help producing deliverables at a competitive cost (Creth, 1986). This is consistent with the result where on the job training has a positive relationship with cost target, thus a company which adopts this practice may be able to produce a more quality deliverables while meeting the cost target.

The usage of email and intranet in a company may bring many benefits to both employees and organizations, example of it includes cost saving, improved decisions and business processes (Rahim & Singh, 2006). This is consistent with the result obtained; the usage of email and intranet in an organization will positively affect the cost target of the project.

Human resource performance appraisal will lead to the creation of a training and development schedule for the employee (Lee-Kelley & Blackman, 2011). Appraised employees can be selected to join different levels of trainings to help save cost (Cifalino & Baraldi, 2009). So instead of having all employees trained at the same time, the poorly performed employees are given the priority to go through training. This way, instead of having the whole work force involved in training, only

the poorly performed are trained, this will cut down the number of employees going for training and may help save time and money because the bigger the number of employees going to training, the higher the cost will be.

To monitor the progress of the project, information about the budget, schedule and quality is obtained from the feedback of the project team members, and the feedback can be used to increase the accountability of the members and motivate them to perform more diligently (Bergen et al., 1992). Besides that, the information can also be used to guide corrective action (Al-Jibouri, 2003). With the increment of accountability in team members, there will be less error during the course of the project, error will cost money to the project because resources are needed to correct it. Thus monitoring progress of the project is shown to have positive relationship with meeting cost target in the result.

Conflict represents the largest reducible cost in many businesses (Cram & MacWilliams, 2008) and conflict management often represents the greatest opportunity for cost control in the next century (Slaikeu & Hasson, 1998). Cost from conflict will often affect the cost target, and to solve it, the most cost effective method is via negotiation which involves fewer people and fewer hours (Buss, 2009). So as a result, conversation may help a company achieve its target cost without the need to employ external mediator to solve interpersonal issues.

Go through training if there is no work at the near future is negatively associated with meeting cost target. This is because training involves a fixed amount of cost such as the instructor wages, classroom expenses and variable cost such as student materials (Blakenhorn, 1999). When the employee is not working in a project, he/she is not productive, so any extra given training may be considered as a waste of money.

#### **4.16 Relationship between HRM Practices and Meeting Technical Specification**

Meeting technical specification is positively related to team building activity. This is consistent with Jones and Harrison (1996), team building events is associated with several success dimensions and has positive effect on project performance. A cohesive team may lead to a better output because the members can work together effectively to solve problems.

Issue log is a written log documents which helps monitor who is responsible for resolving specific issues by a target date and issue resolution addresses obstacles that can block the team from achieving its goals (PMBOK, 2008). With the issues resolutions clearly defined, the deliverables for the project will often meet the defined technical specifications. And by logging the person responsible for resolving a specific issue, any discrepancies from the technical specifications will not be missed out causing the project deliverables to no meet the technical specifications.

So as a result, the usage of issue log is positively associated with meeting the technical specifications.

#### **4.17 Relationship between HRM Practices and Meeting Client Expectation**

Papke-Shields et al., (2010) stated in their paper saying that project personnel who had their responsibilities defined clearly can lead to a number of positive effects on project performance. If a project manager is not pre-assigned, this means responsibilities are not pre-assigned as well and may affect the productivity or performance of the project team. Besides, if the project manager were to be nominated by team members in a project, favouritism might occur, and it may lead to inefficient decisions and loss of motivation and productivity (Albright & Carr, 1997). The project manager nominated might not be the most competent one; the project manager may just be the most popular guy in the workplace. So this may lead the project manager to form a team which is not optimum for a given situation (e Silva & Costa, 2012). This will result in final deliverable which may not meet the clients' expectation.

At the end of the project, core workers will often faced with a period of sitting in a bench and this often makes them feels anxious (Huemann at al., 2007). And with the nature of project as temporary, this brings a degree of uncertainty for employees who cannot be sure what kinds of project they will be assigned to the location or the colleague they will work with (Turner et al., 2008). Thus role conflict may happen and this may cause damage to project work (Rau & Hyland, 2002).

Damaged project deliverables will affect client expectations. And so, team members held in abeyance if there is no work at the near future is negatively associated with meeting client expectation.

## **CHAPTER 5**

### **CONCLUSIONS AND RECOMMENDATIONS**

This chapter draws the conclusions for the research. The findings are summarized and concluded in this chapter, besides that the limitations of the research and further recommendations to improve the research are also included in this chapter.

#### **5.1 Summary**

The aim of this study is to investigate the different project human resource practices in from various discipline or industries. The rationale of the research is to find out more about the project human resource management activities in various industries. Besides that, it is also the intention of the research that the result may also be able to help companies achieve a better performance by improving the HRM activities and finally to contribute to the existing knowledge base.

First, existing human resource literatures were reviewed to obtain a better understanding of the topic and to be able to draft the questionnaire survey, existing literature were studied. First, the features of a project oriented company were studied

to find out how are the work processes in those companies. The several features of a project oriented company may include a temporary work process, dynamic work environment, project portfolio resources and demands and specific management paradigm (Schuler, 1996).

Next, what are the human resource processes in a project oriented company, the differences between the HRM process in a project oriented company and a non project oriented company, there are more activities involved in a project oriented company, this includes assignment to project, engagement on project and dispersion after project (Huemann, et al., 2007). Not only that, PMBOK's guide to project human resource management were also reviewed to provide a more detailed information on the various processes in a project team. The main overview of project HRM in PMBOK is acquire project team, develop project team and manage project team.

Subsequently, a survey questionnaire was sent out to 200 respondents to identify the practices adopted by the companies in reality. There were only 41 responses received. Then, the result were analysed to investigate the differences of human resource practices conducted in different settings. Lastly, among all the practices, the practices which can be adopted or adapted by companies were identified.



Next, the responses were collated and analysed using Kruskal-Wallis and Spearman's Ranking method. Kruskal-Wallis was used to identify whether there were any differences in practices performed by the various groups of participants or not. The participants were asked to fill in their project and company information, then they are categorized into different groups which varies in industry, project size, project duration, number of project participants and company annual turnover. Then they are analysed to see whether there are any differences in activities practiced among the participants belong to a certain group. As a result, the analysis showed there were no differences in activities practiced by companies of different industry and project of different durations. Besides that, there were differences among all the other groups.

Next, Spearman's Ranking was used to identify the relationship between success factor and the activities performed. Towards the ending part of the questionnaire, participants were asked rank a success factor table indicating which goal must be met to consider their project a success. Then the success factors were analysed with the all activities listed in the questionnaire to find out the relationship of each activities versus each success factors. The result showed some positive and negative relationship. That was used to show which activity should or should not be adopted or adapted by companies if they wish to improve their project success.

## 5.2 Conclusion

Existing literatures on the topic of human resource management and project management were studied. Project human resource management has similarities but also substantial differences from general human resource management (Huemann et al., 2007), thus the topic of human resource management were also studied to help better understand the topic more. There were basically four groups of activities which are most often mentioned in literatures, namely project team member selection, project team development, project team management and project dispersion activities. Project team member selection involves the process of selecting team members or acquiring the necessary project personnel from other location for the job. Then, project team development involves the development of the project team this may include reward and training. Project team management involves the management of members in the team; this may include conflict management, monitoring, collocation, performance appraisal and issue logging. Lastly, project dispersion processes involve the activities which can be done after the project completion, this may include debriefing, counselling, training or even held in abeyance.

This study identified that the activity which had been adopted most often are the activities in the project team management category, namely monitoring, solving conflict, performance appraisal, and issue managements. Which in words, companies tend to concentrate on managing the employees during the course of the project. Besides that, the result also showed that activities included in the project dispersion process are less practiced, this is consistent with the literature of Huemann (2007).

Next, the differences of HRM practices for project in different settings were studied. Although it had been found that HRM practices are similar among industries, there were still other factors such as project size, project duration, number of project participants and company annual turnover analysed. The result showed there were differences in all those groups besides project duration. Reward with promotion, debriefing and counselling after project completion is more likely to happen with project of bigger size. Not only that, for project with a bigger amount of members, employee are more likely to be hired from far off location, have non computer based classroom training, and rewarded with promotion. Similarly, company annual turnover also affect the activities practiced; in a low turnover company, personnel development activities are less likely to happen. In contrast, personnel development activities happens more on companies with higher turnover.

Lastly, there were many literatures which studied the various HRM practices, and there are many activities which had been developed to improve project success. The result from the research showed that there are three success factors which can be improved by using various HRM practices. The three success factors include, meeting cost target, meeting technical specification and meeting client satisfaction. However, not all activities were found to have positive relationship with the success factors, there are a small number of activities which had negative relationship with the success factors. The activities which will positively affect the cost includes pre-assigned project team members, computer based training provided, regular monitoring, conversation to solve interpersonal issues, on the job training provided, non computer based classroom training provided, usage of intranet and email for

communication and appraisal during the course of project. Besides that, go through training after project is found to be negatively related to meeting the cost target. Next, the activities which have a positive relationship with meeting technical specification includes team building activities provided and usage of issue log. Lastly, there were two activities found to be negatively related to meeting client expectations, which was project team members nominated by the team members and team members are held in abeyance when there is no work at the near future. The result of this research addressing the topic were not 100% consistent with other researchers, but it had successfully provided additional support for the link between use of PM practices and increased project success.

Below is a table which summarizes which activities that can be adopted to increase a certain success factor such as cost, technical specification or client expectation. The table is compiled according to the relationship of each activity to a certain success factor, the activities which has a positive relationship with a success factor should be adopted more.

Table 5.2: Activities that should be adopted by companies

Success factor	Should adopt more	Should adopt less
Meet cost target	Project members are pre-assigned by the management	Go through training if there is no work in the near future
	Computer-based training provided	

	Project progress are monitored regularly	
	Conversation is used to solve interpersonal issues	
	On-the-job training provided	
	Non computer-based classroom training provided	
	Electronic communications such as email or intranet is used to communicate with members in geographically dispersed area	
	Performance appraisal conducted during the course of the project	
Meeting technical specification	Team Building activities provided	
	Issues arises is logged in a written document	
Meeting client expectation		Team members are held abeyance if there is no work in the near future
		Project manager is nominated by the team members

### **5.3 Limitations of the Research**

The sample size for the survey data collection were small, a bigger sample size would ensure a more accurate result for this research. This may be one of the factors which had caused the result to be inconsistent with the work of other researchers.

Furthermore, one of the factors which had caused the small sample size is the attitude of the recipients. Some of the recipients were found simply filling in the survey because there is no any reward or incentives given to them when they were requested to help participate in the study. Thus many responses had to be deleted.

### **5.4 Further Research**

The topic on activities during the dispersion of project can be further studied as the topic on project human resource dispersion is seldom mentioned in the existing literatures.

Not only that, the result which indicates that there is no significant difference in activities practiced by project of different duration, this is inconsistent with other researchers, thus it can be further studied to obtain a more conclusive result.

Human resource retention can also be studied as it was seldom mentioned in any of the project HRM literature. The dynamism nature of a project requires employees to work outside their comfort zone, and this may lead to high turnover.

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## APPENDICES

APPENDIX A: Relationship between activities performed and success factors

			Q10.1	Q10.2	Q10.3	Q10.4	Q10.5
Spearman's rho	Q6.1	Correlation	.250	-.252	.060	.162	.055
		Coefficient					
		Sig. (2-tailed)	.115	.112	.708	.312	.732
		N	41	41	41	41	41
	Q6.2	Correlation	-.016	.148	-.171	-.147	-.123
		Coefficient					
		Sig. (2-tailed)	.922	.355	.285	.360	.445
		N	41	41	41	41	41
	Q6.3	Correlation	-.003	-.050	.151	-.026	-.228
		Coefficient					
		Sig. (2-tailed)	.983	.755	.346	.874	.151
		N	41	41	41	41	41
	Q6.4	Correlation	-.079	-.217	-.085	-.128	-.174
		Coefficient					
		Sig. (2-tailed)	.625	.172	.596	.425	.276
		N	41	41	41	41	41
	Q6.5	Correlation	.498**	.067	.214	.266	.120
		Coefficient					
		Sig. (2-tailed)	.001	.677	.180	.093	.456
		N	41	41	41	41	41
	Q6.6	Correlation	.170	.037	-.066	-.088	.148
		Coefficient					
		Sig. (2-tailed)	.288	.819	.680	.582	.357
		N	41	41	41	41	41
Q6.7	Correlation	.073	-.153	-.234	-.227	.055	
	Coefficient						
	Sig. (2-tailed)	.650	.339	.140	.154	.734	
	N	41	41	41	41	41	
Q6.8	Correlation	.246	-.032	.040	.198	.059	
	Coefficient						

		Sig. (2-tailed)	.121	.841	.804	.215	.715
		N	41	41	41	41	41
Q6.9		Correlation Coefficient	-.081	.004	-.115	-.038	.059
		Sig. (2-tailed)	.617	.982	.472	.815	.714
		N	41	41	41	41	41
Q6.10		Correlation Coefficient	-.182	.036	-.029	-.341*	-.155
		Sig. (2-tailed)	.255	.824	.857	.029	.334
		N	41	41	41	41	41
Q7.1		Correlation Coefficient	.075	.101	.337*	.065	-.051
		Sig. (2-tailed)	.641	.531	.031	.685	.754
		N	41	41	41	41	41
Q7.2		Correlation Coefficient	.352*	.138	.150	.182	.287
		Sig. (2-tailed)	.024	.389	.349	.254	.069
		N	41	41	41	41	41
Q7.3		Correlation Coefficient	.435**	.055	.121	-.096	.247
		Sig. (2-tailed)	.004	.733	.452	.552	.119
		N	41	41	41	41	41
Q7.4		Correlation Coefficient	.372*	-.036	.122	-.133	.151
		Sig. (2-tailed)	.017	.822	.448	.408	.346
		N	41	41	41	41	41
Q7.5		Correlation Coefficient	.022	-.048	.030	-.026	.003
		Sig. (2-tailed)	.890	.768	.850	.871	.986
		N	41	41	41	41	41
Q7.6		Correlation Coefficient	-.055	.111	-.157	.045	-.045
		Sig. (2-tailed)	.734	.490	.327	.779	.780
		N	41	41	41	41	41
Q7.7		Correlation Coefficient	.211	-.087	-.086	.080	.239
		Sig. (2-tailed)	.184	.589	.593	.620	.133
		N	41	41	41	41	41
Q7.8		Correlation Coefficient	.157	.047	.290	.120	-.088
		Sig. (2-tailed)	.328	.771	.066	.454	.585
		N	41	41	41	41	41
Q7.9		Correlation Coefficient	.176	-.089	.029	-.155	.007
		Sig. (2-tailed)	.270	.581	.859	.332	.968

	N	41	41	41	41	41
Q8.1	Correlation Coefficient	.239	-.001	.149	-.071	-.064
	Sig. (2-tailed)	.132	.993	.351	.657	.693
	N	41	41	41	41	41
Q8.2	Correlation Coefficient	.403**	.108	.250	.226	.142
	Sig. (2-tailed)	.009	.500	.115	.156	.376
	N	41	41	41	41	41
Q8.3	Correlation Coefficient	.422**	.035	.175	.194	.054
	Sig. (2-tailed)	.006	.827	.274	.223	.737
	N	41	41	41	41	41
Q8.4	Correlation Coefficient	.239	-.032	.148	.138	.010
	Sig. (2-tailed)	.133	.843	.357	.391	.951
	N	41	41	41	41	41
Q8.5	Correlation Coefficient	.350*	.063	.245	.304	.107
	Sig. (2-tailed)	.025	.697	.123	.053	.505
	N	41	41	41	41	41
Q8.6	Correlation Coefficient	.235	.064	.271	.061	.059
	Sig. (2-tailed)	.139	.691	.087	.706	.715
	N	41	41	41	41	41
Q8.7	Correlation Coefficient	.373*	.170	.208	.027	.041
	Sig. (2-tailed)	.016	.287	.192	.866	.798
	N	41	41	41	41	41
Q8.8	Correlation Coefficient	.189	.167	.310*	.169	.047
	Sig. (2-tailed)	.236	.296	.048	.290	.768
	N	41	41	41	41	41
Q9.1	Correlation Coefficient	-.075	-.042	.080	-.063	-.195
	Sig. (2-tailed)	.639	.793	.617	.695	.222
	N	41	41	41	41	41
Q9.2	Correlation Coefficient	-.234	-.215	-.098	-.182	-.178
	Sig. (2-tailed)	.141	.177	.543	.254	.265
	N	41	41	41	41	41
Q9.3	Correlation Coefficient	-.333*	-.099	-.175	-.171	-.231
	Sig. (2-tailed)	.033	.536	.274	.284	.146
	N	41	41	41	41	41

Q9.4	Correlation Coefficient	-.232	-.005	.008	-.195	-.229
	Sig. (2-tailed)	.145	.977	.963	.223	.149
	N	41	41	41	41	41
Q9.5	Correlation Coefficient	-.114	-.062	-.013	-.401**	-.200
	Sig. (2-tailed)	.480	.700	.935	.009	.211
	N	41	41	41	41	41

\* = correlation is significant at 0.05 level

\*\* = correlation is significant at 0.01 level

## APPENDIX B: Survey Questionnaire

Q1:

1.1 Name of respondent (Optional): \_\_\_\_\_

1.2 E-mail: \_\_\_\_\_

1.3 Telephone number(Optional): \_\_\_\_\_

Q2:

2. Position:

- Engineer
- Assistant engineer
- Technician
- Operator
- Project manager
- Department head
- Other: \_\_\_\_\_

Q3:

3. The type of industry you are currently in:

- Manufacturing
- Health care (pharmaceuticals and biotech)
- Financials (e.g. banks, insurance, financial services, investment)
- Information Technology
- Construction
  - Developer
  - Contractor
  - Consultant
- Others, please indicate \_\_\_\_\_

Q4:

Project details

4.1 The project size in RM: \_\_\_\_\_

4.2 The project duration in months: \_\_\_\_\_

4.3 The number of participants in the project : \_\_\_\_\_

Q5:

Company Details

5.1 The annual turnover in RM: \_\_\_\_\_

5.2 The number of employees: \_\_\_\_\_

Q6:

On the scale of 0 to 5, 0 is never, 1 is rarely and 5 is always please indicate how often those items were practices in your organization



Item	Project Team Member Selection Practices	Yes					No
		Always	Usually	Often	Sometimes	Rarely	Never
		5	4	3	2	1	0
6.1	Take place before the project starts						
6.2	Take place when the project is ongoing						
6.3	Employees are allowed to choose the project they want						
6.4	Negotiation with the respective staff to ensure project gets competent staff						
6.5	Project members are pre-assigned by the management						
6.6	Project members are hired from other organizations						
6.7	Employees from a far off location from the project location may also be hired to be a part of the team						
6.8	Project manager is pre-assigned by the management						
6.9	Project manager is hired from other organization						
6.10	Project manager is nominated by the team members						
6.11	Others _____ _____						

Q7:

On the scale of 0 to 5, 0 is never, 1 is rarely and 5 is always please indicate how often those items were practices in your organization

Item	Project Team Development Practices	Yes					N o	
		Always	Usually	Often	Sometimes	Rarely		Never
		5	4	3	2	1		0
7.1	Team Building activities provided							
7.2	On-the-job training provided							
7.3	Computer-based training provided							
7.4	Non computer-based classroom training provided							
7.5	Mentoring or coaching by other team members							
7.6	Rotating work assignment among team members							
7.7	Team members are encouraged to join external seminar or courses which are useful							
7.8	Contributions are recognized with monetary rewards							
7.9	Contributions are recognized with promotion							
7.10	Others _____ _____							

Q8:

On the scale of 0 to 5, 0 is never, 1 is rarely and 5 is always please indicate how often those items were practices in your organization

Item	Project Team Management Practices	Yes					No	
		Always	Usually	Often	Sometimes	Rarely		Never
		5	4	3	2	1		0
8.1	Ground rules discussed when starting the project							
8.2	Project progress are monitored regularly							
8.3	Conversation is used to solve interpersonal issues							
8.4	Solve conflict strategically by following a set of established procedure of mechanism							
8.5	Electronic communications such as email or intranet is used to communicate with members in geographically dispersed area							
8.6	Project members from geographically dispersed area are relocated to close proximity for critical times							

8.7	Performance appraisal conducted during the course of the project						
8.8	Issues arises is logged in a written document						
8.9	Others _____ _____						

Q9:

On the scale of 0 to 5, 0 is never, 1 is rarely and 5 is always please indicate how often those items were practices in your organization

Item	Project Team Dispersion Practices	Yes					No
		Always	Usually	Often	Sometimes	Rarely	Never
		5	4	3	2	1	0
9.1	Debriefing after the completion of project						
9.2	Counseling provided on job opportunities available in the company						
9.3	Go through training if there is no work in the near future						
9.4	Involve in training other employees if there is no work in the near future						
9.5	Team members are held abeyance if there is no work in the near future						

9.6	Others _____ _____						
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Q10:

Section D: Please indicate which goals must be met to measure the success of the projects

<b>Item</b>	<b>Success measures</b>	<b>Strongly agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly disagree</b>
10.1	Meeting cost target					
10.2	Finishing the project on time					
10.3	Meeting technical specifications					
10.4	Meeting client expectation					
10.5	Accomplishing business objectives					