DEVELOPMENT OF A FRAMEWORK FOR PARTNERING THROUGH ALIGNING ORGANIZATIONAL CULTURES IN THE MALAYSIAN CONSTRUCTION INDUSTRY

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LIST OF ABBREVIATIONS

3PU	Public-Private Partnerships Unit
9MP	Ninth Malaysia Plan
ANP	Analytical Network Process
CIDB	Construction Industry Development Board
CIMP	Construction Industry Master Plan
COBAP	Co-operative Benchmarking Approach to Partnering
COLA	Cross Organization Learning Approach
CVF	Competing Values Framework
D&B	Design & Build
EOT	Extension of Time
GDP	Gross Domestic Products
HEI	Higher educational institute
IBS	Industrialised Building Systems
IT	Information technology
LNG	Liquid Natural Gas
MY	Malaysia
OCP	Organizational Culture Profile
PFI	Private Finance Initiative
PPP	Private Public Partnerships
PSI	Private Sector Involvement
PWD	Public Works Department
RM	Ringgit Malaysia
SME	Small and Medium Enterprises
SPV	Special Purpose Vehicle
SSM	Soft systems methodology
UK	United Kingdom
USA	United States of America
UKCG	United Kingdom Contractor Group

To my heart and soul,

Afwan Daniel and Auni Maisara

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DECLARATION

This thesis is presented as an original contribution based on Doctorate of Philosophy research at the University of Salford, Salford, United Kingdom and has not been previously submitted to meet requirements for an award at any higher education institution under my name or that of any other individuals. To the best of my knowledge and belief, the thesis contains no previously published or written by another person except where due reference is made.

…… (Signed)

……. (Date)

ABSTRACT

In line with the main awareness of partnering in solving the many issues within the global construction industry, the Malaysian government has call upon the local industry to embrace and adapt partnering practices in their project delivery. Although culture has been noted as one of the main enabler for partnering, there is lack of research in highlighting the role of culture in partnering and virtually no evidence of a partnering framework established for a multi-ethnic and racial workforce in a developing country such as Malaysia. This research aims to develop a framework for partnering that aligns organizational culture in the Malaysian construction industry. This exploratory research studies the basic concept of partnering and the influence of culture to partnering success. This research seeks to identify which partnering enablers are readily available in the Malaysian construction industry at present. Apart from that, this research also explores the current organizational culture which affects the level of engagement in partnering among private SME consultant firms in particular and the industry in general. The private SME consultant firms are highlighted in this research due to the evidence that indicates the critical role of the consultants in driving the innovations in the industry, which is also cited as one of the outputs from successful partnering.

This research leans towards interpretivist epistemological standpoint with an inductive approach and employs a convergent parallel mixed methods survey design in order to answer the research questions. In this research, 14 semi-structured interviews were conducted with top and middle managers in 4 private SME consultant firms and 69 questionnaires were completed by practitioners from various segments of the Malaysian construction industry. As the design suggests, findings from a critical literature review, semi-structured interviews and questionnaires are merged to form a foundation for the development of framework in this research.

This research contributes not only to expanding the knowledge in the concept of partnering but also for the implementation of partnering in the construction industry particularly in Malaysia through the framework developed. The practical implication of this thesis is to provide the construction practitioners with the method to establish, enhance and maintain a network of successful partnering relationship in Malaysia.

CHAPTER 1

INTRODUCTION TO THE RESEARCH

1.1 BACKGROUND

The construction industry is commonly cited as a multifaceted industry, of many adversarial relationships due to different parties collaborating in temporary organizations working together towards completing a project (Bresnen and Marshall, 2000; Wood et. al., 2002; Sorrell, 2001; Meng et al, 2011). The industry is also widely cited as being the least susceptible to innovation, as compared to manufacturing and other service industries (Slaughter, 1993; Dulaimi et. al., 2002; Blayse and Manley, 2004). The nature of the construction industry is an industry whose firms come together as temporary organizations to deliver the construction projects (or products); delivering its product to its client base by way of a stream of generally single and unique projects. These projects typically draw together a significant number of diverse small and large construction firms with varying collaborations (Sexton and Barret, 2003). The success of these construction projects often relies heavily on smooth coordination among the member firms in temporary organizations. The projects are also subject to dispute and misunderstanding risks among member firms, which in turn could cause potentially beneficial relationships turning into relationships that are more adversarial in nature.

The Malaysian construction industry is not far off from facing these problems. It has been cited that the industry suffers from limited trust, minimal cooperation, poor communication, and adverse relationships (CIDB, 2009). The construction industry has also been cited lacking of innovations and there are problems with performance improvement (Chan et. al. 2003; Egan 1998; Eriksson 2008). The construction industry in Malaysia is also being hampered by such problems, which is further worsened by the influx of unskilled foreign construction workers, corruption within the system, and volatile economic conditions. These issues became more critical as the industry progresses positively in 2012. The third quarter of 2012 has recorded a strong growth of 18.3% in construction sector gross domestic product (GDP)

contributed by the robust expansion in civil engineering and residential subsector (MoF, 2012). The expansion in the civil engineering subsector relates to the acceleration of works in large-scale infrastructure projects, namely the Sungai Buloh-Kajang Line MY Rapid Transit, LNG Regasification Terminal in Melaka and Manjung Coal-Fire Plant in Perak. The current increase in the number of infrastructure projects and the government's intention to implement mega project as private finance initiatives (PFI) (Koh, 2006) has reflected the Malaysian government's efforts to implement partnering in construction projects, seeing that PFI is a subset of PPP as understood in Malaysia (Rusmani, 2010). Realizing these issues, the Malaysian Construction Industry Development Board (henceforth CIDB) has proposed the 10-year Malaysian Construction Industry Master Plan (2006-2015) which identified and recommended partnering as a method to overcome the inherent problems within the construction industry. Partnering is believed to be a viable approach to integrate the construction industry supply chain, improve the client-customer relationship, enhance levels of productivity and quality of construction project implementation (Egan, 1998; Garnett et al, 1998; CIDB, 2009).

The partnering strategy in the construction industry made its debut in the 1990s following the release of the Latham Report (1994) which was later complemented with the publication of Egan Report (1998). Naoum (2003) states that this strategy has then been implemented successfully in the UK, USA, Australia and Japan and since then has been made the main point of reference due to their success in establishing suitable procedures for the selection of subcontractors in public sector contracts. The adoption of partnering into the construction industry in these countries can be attributed to the fact that the relationships in these industries were commonly lacking trust, respect and honesty between clients, main contractors and subcontractors (Humphreys et. al, 2003).

Partnering is also mentioned as the antidote to the problem of lack of trust, adverse relationships, minimal cooperation and poor communication (Egan, 1998; Garnett et al, 1998; CIDB, 2009). More importantly, the level of trust and understanding which leads to third generation partnering is likely to guarantee subsequent projects with the same client as well as promoting a culture to support innovation and learning (Bennett and Jayes, 1998). However, in order for partnering to be successful, a way to eliminate adverse behaviour or relationships must be formulated, together with a

robust dispute resolution system (Naoum, 2003) which sets it apart from the conventional method. In line with the implementation of partnering, the Malaysian government has established a Public Private Partnership Unit (3PU) of which its main role is to oversee and support the implementation of PPP methods within the country. Along with the aim of implementing partnering practices, it is important that all partnering factors are present to ensure its success. These factors include collaboration and cooperation, tools, policies, procurement, communication, trust and culture (Nifa and Ahmed, 2010).

1.2 PROBLEM STATEMENTS / RESEARCH GAP

It should also be taken into consideration that generally the problem faced by the Malaysian construction industry mentioned above could be attributed to the nature of the construction industry, which is a multifaceted industry comprised of several firms in 'temporary organizations' coming together bound by contract to implement the project (Nifa and Ahmed, 2009). These different firms each bring a type of organizational culture and work ethics and failure to align these cultures in a construction project may contribute to differing objectives and understanding in implementing the project. Additionally, this will cause friction among the construction team and may result in more adverse relationships and lack of trust. This issue is crucial to deal with as the Malaysian construction industry is becoming even more saturated each year with 66,210 construction firms registered with CIDB up to March 2012, compared to 63,977 in 2008 (CIDB, 2012); and is mostly comprised of SMEs (Kamal and Flanagan, 2012) which may possess different organizational cultures and work ethics.

There have been several studies linking the limited trust and adverse relationships in the construction industry to the misalignment of organizational culture among firms involved (Ngowi and Pienaar, 2005; Fletcher and Fang, 2006). However, there seems to be a void within the partnering frameworks available in current literatures which highlights the role of organizational culture in ensuring partnering success (Nifa and Ahmed, 2010). This research strives to fill in this gap in current partnering knowledge, by identifying the types of organizational culture that will assist the implementation of partnering in the Malaysian construction industry, and the types of

organizational culture which serves as a deterrent to partnering; apart from identifying partnering enabling factors that are already present within the industry. By understanding the type of organizational culture that benefits partnering in Malaysia, the risks that accompany the implementation of partnering can be minimized. This research develops a framework, which adopted, will enhance the chances of success for partnering implementation in the Malaysian construction industry. The learning process and knowledge sharing between partners is greatly assisted when trust is present, and because of this fact, culture is also important in improving the industry's innovativeness (Ivory, 2005). Taking into consideration the role of private SME consultant firms in having a pivotal role to increase the industry's innovativeness (Ling, 2003; Panuwatwanich et al, 2008), this research seeks their specific insights on how partnering could be enabled more effectively in Malaysia. In order to reach a robust understanding of the situation, a mixed methods survey research design is employed. The methodology will be discussed in detail in following chapters of this thesis.

1.3 RESEARCH AIM AND OBJECTIVES

The aim of this research is to propose a framework for partnering that meets the needs of different organizational cultures within the Malaysian construction industry.

This aim will be achieved via the following objectives;

- To develop an understanding of partnering in general; its overall concept and existing frameworks in the construction industry.
- To investigate the concept of organizational culture and its relationship with partnering in the construction industry.
- To determine the level of engagement in partnering practices among private SME consultant firms in Malaysian construction industry.
- To identify the enablers or barriers of partnering as perceived by the private SME consultant firms.
- To explore the cultural barriers in Malaysian context and the types of organizational culture among private SME consultant firms in Malaysian construction industry.

- To develop a framework for effective partnering through aligning different organizational cultures in Malaysian construction industry.

1.4 RATIONALE/RESEARCH QUESTIONS

One of the main components for partnering is the construction practitioners, who are the active players in the industry. The practitioners are human factors which daily interactions are influenced by their organizational cultures be it consciously or not. As the construction industry is made of firms from various specialities, different types of organizational culture exist and will affect the interaction of these firms within a construction project. Is there a way to align all of these different organizational cultures in a partnering relationship to ensure successful partnering implementation? Culture is also an integral variable in relationship creation and network formation, and this will impact the success of the partnering venture between these firms. From this standpoint, this research will bring light to current partnering situation in Malaysian construction industry through answering these research questions;

1. What are the enabling partnering factors already present in Malaysia, and how many have yet to be developed?
2. What types of organizational culture exists in Malaysian construction firms?
3. How can organizational culture assist the success of partnering to benefit the Malaysian construction industry?

These questions will be explored in details in chapters 2, 3, 5 and 6 of this thesis. In order to achieve validity of the results, multiple data sources analysis will be adopted in this research

1.4 RESEARCH PROCESS

To ensure that this research is conducted in a manner to satisfy its primary aim and objectives, several methodological steps have been developed to be implemented throughout the course of this research. This research is divided into 3 distinctive phases namely; literature review, data collection and analysis, and finally the framework development stage.

The first phase commencing this research is the literature review phase. The first part of phase is conducted to develop a comprehensive understanding of partnering practices in the construction industry, identifying its key enabling factors, benefits and barriers, classifying partnering frameworks in current literatures, reviewing current guidelines on partnering made available by the authorities in Malaysia and exploring current dissemination of knowledge for partnering in Malaysia.

The second part of this phase is set to justify the prominent role of culture in assisting partnering. It focuses on exploring the types of organizational cultures and classifying the methods available in assessing the organizational culture as well as taking inprevious findings which connects organizational culture to construction industry in order to determine the best method in assessing organizational culture for firms in construction industry. The entire research process is depicted in the following Figure 1.1.

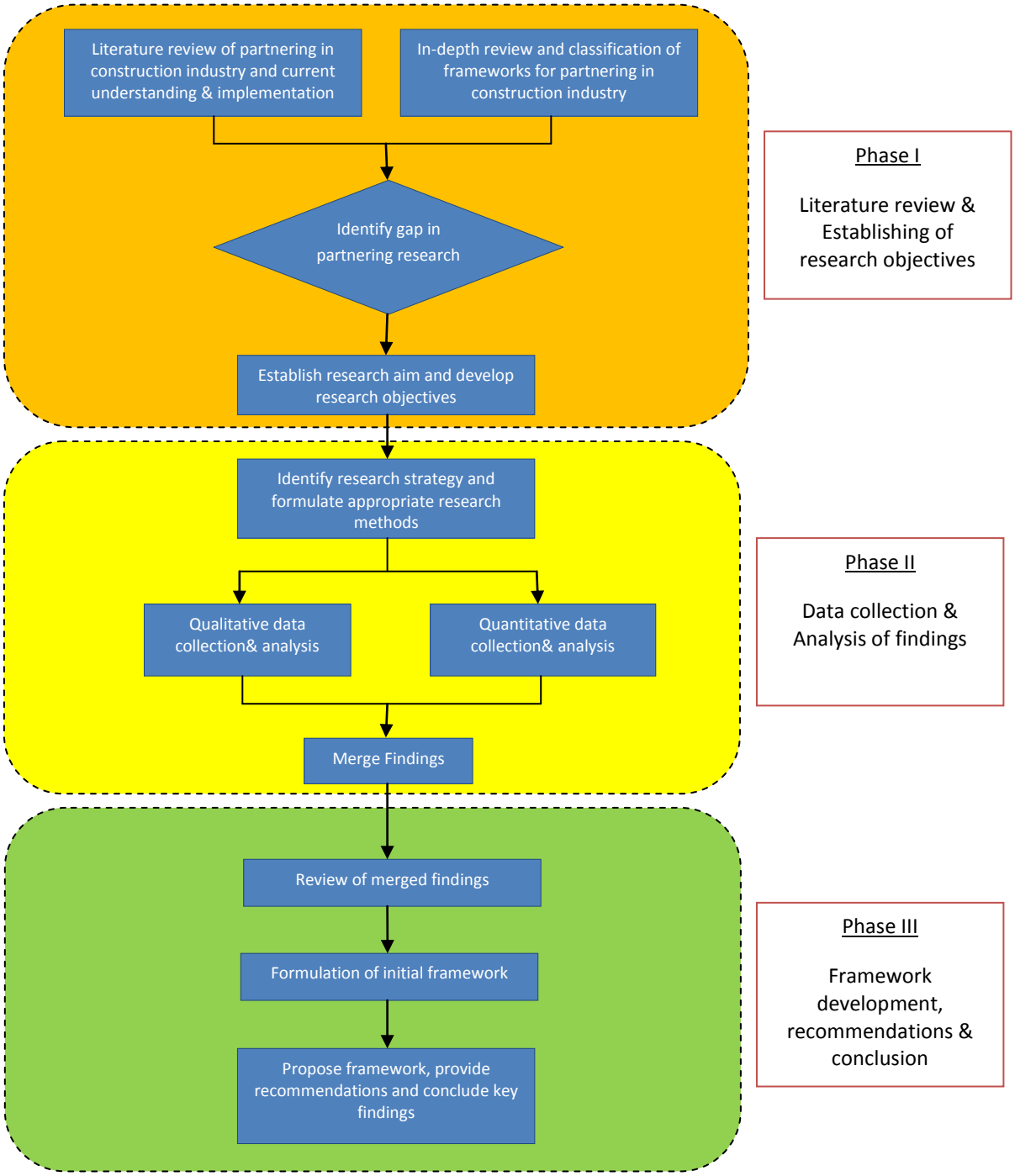


Figure 1.1: Research methodological framework

The second phase of this research focuses on developing a sound methodology to achieve the aim and objectives of this research, as well as answering the research questions posed. Through justifications of research design and methodologies selected, both qualitative and quantitative data collection will be conducted at this phase.The data collection revolves around 4 themes in this research namely;

- Understanding of partnering concept
- Awareness of partnering in other countries
- Types of organizational culture and structure in construction firms
- Role of organizational culture in partnering

The first theme of the data collection stage is, understanding of the partnering concept. It seeks to determine how do the construction practitioners in Malaysia perceive and understand the concept of partnering, whether they know what processes and stages are involved in partnering. The second theme, is to ascertain whether the practitioners are aware of partnering practices in countries other than Malaysia, whether they would consider it would work in Malaysia and what are required by the Malaysian construction industry in order to make the implementation efforts a success. In this theme, the point of reference for partnering in other countries is the UK, as the UK is one of the pioneers in systematic implementation of partnering within the construction industry, since the establishment of Latham (1994) and Egan (1998) reports. The third theme of this research aims to know the type of organizational culture and structure in construction firms. The organizational culture is evaluated by the participants through the 7 dimensions of organizational culture as inspired by Cheung et al (2011) and then mapped on the Competing Values Framework (CVF) (Cameron and Quinn, 1999), to identify which aspects of the construction firms that did not progress due to unsuitable organizational culture. With this respect, only the 7 dimensions are tested in this research. The aspects which are known to assist partnering will be taken into consideration for the development of the framework that will align current unsuitable culture dimensions into appropriate types of culture for partnering success. The final theme of this research will determine the role of organizational culture in partnering. Within this theme, the participants will identify if their current organizational culture is beneficial or detrimental to a partnering venture. The factors that will assist in developing the right culture for partnering will also be identified through this final theme.This progresses with the separate analysis for the qualitative and quantitative methods. Accordingly, the analyses for both methods are assisted with the use of Nvivo10 (Edhlund and McDougall, 2013) and SPSS 17 (Field, 2009).

The final phase of this research is the framework development, recommendation and reporting stage. The findings from both qualitative and quantitative analyses are then tabulated according to the themes in answering the research questions. As this research is founded upon the inductive process of theory building, findings from this research will be taken on board and incorporated into the development of a framework for effective partnering through aligning different organizational cultures in Malaysian construction industry. Recommendations will be made based on the findings of this research and conclusions from this research will be included in the thesis.

The research process is discussed more extensively in the following Chapter 4.

1.5 OUTCOMES OF THIS RESEARCH

This research will seek to explore the issues pertaining to the implementation of partnering in Malaysian construction industry, and how these issues can be assisted with aligning organizational cultures among parties involved in the partnering ventures. The main outcomes of this research are summarized as below:

- Recognizing the actual level of engagement in partnering among construction practitioners in Malaysia.
- Identifying the types of organizational culture in Malaysian construction industry.
- Exploring the current partnering implementation issues in Malaysia through mixed methodology.
- Identifying and classifying partnering key enablers and frameworks in current literatures.
- Identifying the policies pertaining to implementation of partnering in Malaysia.
- Mapping the types of organizational culture according to the dimensions of organizational culture in construction industry.

1.6 SCOPE OF RESEARCH

As previously mentioned in section 1.5, the data collection stage was conducted over the span of 6 months between October 2010 to March 2011, in which both qualitative and quantitative data were collected concurrently. Methods of data collection employed in this research are semi-structured interviews and questionnaire survey.

The unit of analysis chosen in this research are engineering consultant (designer) firms. This is mainly due to the Construction Industry Master Plan (CIMP) (CIDB, 2006) which has identified partnering as one of the remedies to improve the innovativeness of Malaysian construction industry. Engineering consultant (designer) firms were chosen as the main sample in this research due to their capable position in introducing innovation in the construction industry, consistent with the findings from Ling (2003); which highlight the role of designer and consultants in innovation. This made the views of consultants in engineering design firms critical in understanding the issues pertaining to the implementation of partnering. Through understanding the issues faced by this particular segment, the findings can assist partnering efforts to be implemented with success and improve the innovativeness of the industry.

1.7 STRUCTURE OF THESIS

The thesis is divided into seven chapters. A brief breakdown of the chapters and what the researcher seeks to address in each chapters are as follows:

Chapter 1 Introduction

This chapter provides the background of the research, the research problems, aim and objectives as well as the relevant research questionswhich will be the foundation for all discussions in the following chapters. Accordingly, the achievements of this research are also briefly mentioned besides the scope of this research. Finally the structure of the thesis is presented at the end of the chapter.

Chapter 2 Partnering in the Construction Industry

This chapter will address the definition and overall concept of partnering in construction industry. It includes a detailed exploration of current and past literature

pertaining to construction partnering are included in this chapter. The stages, benefits and barriers are explored extensively in this chapter. This chapter proceeds with the identification and classification of key factors for partnering, which the progresses to the categorization of partnering frameworks as found in current literatures. The categorization helps in visualizing the gap in the knowledge with regards to partnering. This chapter ends with a summary of key findings, which direct the decisions for the coming stages in this research.

Chapter 3 The Malaysian Construction Industry and the Importance of Organizational Culture in Partnering

This chapter discusses in detail the background of the Malaysian construction industry, the methods of project delivery applied in Malaysia and the problems faced by the industry are explored, which could be resolved with the aid of partnering. The current state of partnering implementation in Malaysia, and related issues such as regulations in place and authorities responsible for promoting partnering are discussed in this chapter. Apart from that, this chapter also highlights the importance of culture as an enabling factor for partnering, and how organizational culture plays a critical role in improving partnering success. The cultural antecedents of Malaysia are also discussed, progressing to the organizational culture across different industries in Malaysia. Methods for assessing organizational culture are also evaluated in this part of the chapter, which later will informs the selection of the best method for assessing organizational culture among firms in the Malaysian construction industry. The model selected will be incorporated in the following data collection and data analysis stages in this research.

Chapter 4 Research Design and Methodology

This chapter discusses the design and methodology selected for this research. Firstly, the philosophical standpoint of the research, research approach, and techniques adopted in the research are discussed in this chapter. The second part of this chapter discusses the formulation and design of data collection methods employed in this research. The explanation and justification of decisions made pertaining to research design and methodology selected is also included in this research.

Chapter 5 Qualitative Data Analysis

This chapter concentrates on the qualitative data analysis; specifically the participants in interview sessions and the rationale of sampling, the management of qualitative data, the coding process, methods chosen and the steps in analysing the qualitative data. The findings from qualitative data analysis are discussed in detail in this chapter.

Chapter 6 Quantitative Data Analysis

This chapter includes the discussion of findings from quantitative data analysis. It will also include discussion on the sample included in the questionnaire survey, tests conducted in the analysis and the findings from each section of the questionnaire.

Chapter 7 Conclusions, Discussion, and Recommendations

This chapter will revisit the findings in accordance with the objectives first set out at the initial stage of this research. It outlines the proposed framework for partnering in Malaysian construction industry, which takes organizational culture into consideration for success of partnering. The reflection of the researcher on the applicability of the framework and the research process is also included. The final section of this chapter includes the limitations for this research, recommendations and suggestion for future research. The chapter ends with conclusions for this research.

1.8 SUMMARY

This chapter has provided a brief introduction and overall background of this research. The research objectives, questions, and methodological steps have been identified which are deemed necessary to achieve the aims of this research. It is crucial for any research that an extensive literature review be conducted to ensure a thorough understanding of the research area is obtained. The following two chapters will review the current literature related to this research.

CHAPTER 2

PARTNERING IN THE CONSTRUCTION INDUSTRY

2.1 INTRODUCTION

The first chapter of this thesis has set the scene for partnering as the potential solution in curing the construction industry's many problems. Accordingly, it is important to achieve a thorough understanding of the overall concept of partnering and its current practices in the construction industry as it will inform other decisions in progressing with the research. Therefore, the main purpose of this chapter is to provide a review of partnering based on an extensive search of existing literature published in the academic and trade world.

The chapter begins by describing the construction industry and its role in the current world economy. The key players of the construction industry are then defined and the current issues in the industry are also discussed. This chapter progresses to evaluate the various definitions of partnering in the construction industry and continues to discuss the stages and defines Public Private Partnerships (PPP) as a form of partnering. The enabling factors commonly attributed to successful construction partnering will be presented next based on comparing various literature on that particular topic. The discussion proceeds to identifying the barriers and outcomes of partnering, and classifying various strategic approaches for partnering (in the forms of framework, model and guidelines) as found in the current literature. The gaps in the current knowledge will be addressed accordingly, highlighting the role of organizational culture in effective partnering. Finally, a summary of key findings from the extensive literature review is provided at the end of this chapter.

2.2 THE CONSTRUCTION INDUSTRY

The construction industry is a significant contributor to the world economy. The products of this industry provide the necessary public infrastructures and private physical structures for many daily activities such as services, commerce, utilities and other industries. The industry is not only important for its finished product, but it also employs a large number of people (directly and indirectly) hence the effect on the economy of a country during the actual construction process (Wibowo, 2009). Similarly, Dlamini (2012) has also noted the strong relationship between the construction industry and economic growth, specifically in terms of the provision of capital infrastructure. The importance of the construction industry and its many significant contributions are also noted by many studies (Xiou, 2002 ; UKCG, 2009; Khan, 2008; and Dlamini, 2012) specifically in terms of impacts on Gross Domestic Products (GDP), economic activities, government revenues, benefit of investment and nation-wide employments.

At present the global construction industry is recovering from the recent economic downturn from 2007 to 2009, and countries are taking measures to ensure the continued prosperity of their construction sector. According to Baldauf-Cunnington and Hubbard (2011), constrained lending and fiscal measures to address budget deficits in mature markets such as the UK will have a major impact in determining the future of the construction industry. Contrastingly, in fast growing emerging markets, such as Asia and Latin America as well as the frontier markets in the Middle East, population pressures will drive demand for investment in the built environment and fiscal space will allow governments to pursue these plans. Furthermore, in developing nations such as Malaysia, Indonesia and Vietnam, the construction industry is simply too important to be allowed to stagnate or even further decline. Wirahadikusumah and Pribadi (2011) emphasized that the additional pressure from trade liberalization in the construction industry will soon initiate the radical improvement in the process of construction.

It should be emphasized that the construction industry requires large sums of capital and resources due to its dynamic and complex nature of activities. Adnan et al (2008) argues that due to the factor of the size and diversity of the construction industry, its

major industry players are easily exposed to conflicts and numerous issues. This could be due to the misunderstanding of roles and improper risk management within the industry. Therefore, considering the significance of the construction industry, it is highly important to identify the key players of the construction industry, who are the generators of activity and income within the industry. The next section will explore the classification of the construction team of the construction industry, and the roles of these key players within the industry.

2.3 KEY PLAYERS OF THE CONSTRUCTION INDUSTRY

The construction industry is comprised of various parties with distinctive expertise coming together to deliver a construction project. It is essential to identify these key players in order to understand the relationships between them. Many attempts have tried to define the construction team. For the purpose of this research, two classifications of construction team will be discussed to highlight the similarities in the general understanding in regards to the composition of key players within the construction industry.

The first classification of the construction team is provided by Murdoch and Hughes (2007). They had noted how each professional discipline like to focus on their own contribution and the way it relates to other project team members. According to Murdoch and Hughes (2007) it is important to see how the construction industry delivers the service to the clients and society at large, bearing in mind the different function for each construction team player. The construction team can be dissected into five dominant groups, namely builders, designers, regulators, purchasers, and users of buildings, as shown in the following Table 2.1.

Table 2.1: The construction team according to Murdoch and Hughes (2007)

Groups	Role and description
Builder	Fabricating the products of the construction industry. More recently, include focus of management and co-ordination of other parties. Commonly known as contractors.
Designer	Includes architects and consultant design engineers. Designing the products of construction industry. Traditionally, architects are the leader of construction project team.
Regulator	Ensuring buildings and alteration work compiles to the local development plan. This way, critical matters like safety of finished buildings and appearance of buildings can be controlled.
Purchaser	Financing and construction project cost control. Should in any way the expectations of purchasers are not fulfilled, then dissatisfaction is bound to follow.
User	Users of the construction projects. Legislations are imposed to guard the interest of the user of construction projects. More recently the involvement of users at the beginning of a project has been encouraged to ensure the completed project could fully be utilized and benefit its users.

Although the classification made by Murdoch and Hughes (2007) has clearly defined the different groups and roles of practitioners involved in the construction industry, the classification made by Gann and Salter (2000) have established that these different groups of practitioners are interconnected in a network which the construction industry is built upon. Based on the construction industry's participants and project-based processes, the authors have defined five dominant groups in the construction industry namely the regulatory and institutional framework; supply network; project based firms; projects; and technical support infrastructure.

Each of these groups has distinctive roles and function to enable the delivery of a construction project. The interconnected network comprised of various players in the construction industry in the product realization process requires effective coordination and human interaction among all parties involved. This confirms the relevance of this research and its objectives in studying what makes partnering work and the importance of aligning organizational culture in ensuring partnering success. The primary activities and actors for each group as classified by Gann and Salter is shown in the following Figure 2.1.

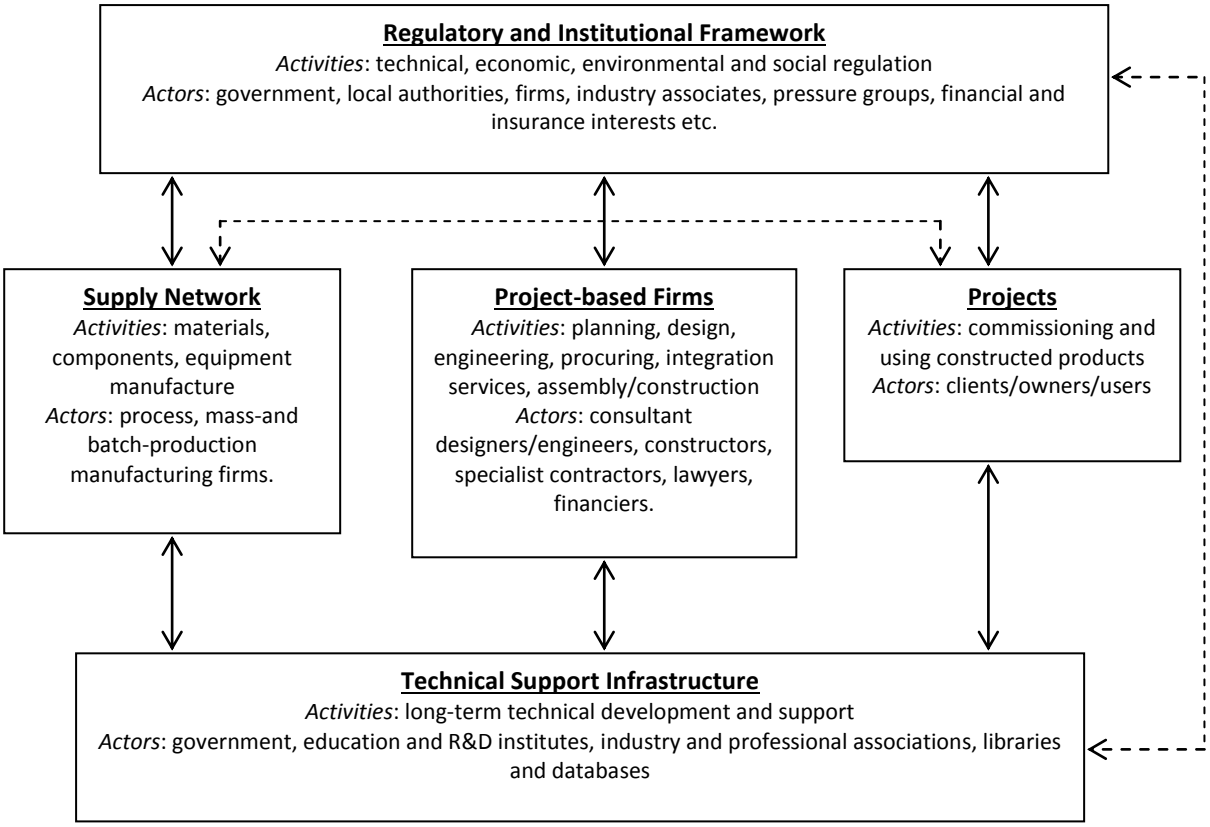


Figure 2.1 The actors of the construction industry (Gann and Salter, 2000)

The segmented nature of the construction industry is the result of firms having various specialities working together towards the completion of construction projects in distinct separate stages, as cultured by the traditional procurement system (Nawi, 2012). Apart from their specialities these firms may also have different perceptions of priorities which lead to friction, misunderstanding and issues within the construction industry. The current challenges faced by the construction industry at present will be discussed in the following section.

2.4 CURRENT CHALLENGES IN THE CONSTRUCTION INDUSTRY

As the global construction industry recovers from the turbulence of world economic downturn, it is imperative that the challenges being faced by the key players of the industry are identified so that actions can be taken to improve the state of the construction industry. A review of current literature has brought to light some of the current challenges within the industry; trends of sustainability in construction as well

as problems in human resources and construction labour market which further show the need for partnering in the construction industry.

Pressures from the business world and global economic situation have led the construction industry to embrace sustainable efforts in its processes and output. Pitt et al (2008) highlighted the three key areas involved within sustainability in construction namely; environmental responsibility, social awareness and economic profitability. Sustainability development strives for meeting the needs of the present without compromising the ability of the future generations to meet their needs (WCED,1987). In defining the way forward for sustainability in construction, Pitt et al (2008) asserted that achieving sustainable construction requires bridging the gap with client demands and awareness in environmental considerations with what is being offered as sustainable process and products in the construction industry.

In parallel to the industry's effort towards sustainability, several studies (Yunus and Yang, 2012; Nawi et al, 2011; Jaillon and Poon, 2008) have examined the application of prefabrication construction or Industrialised Building Systems (IBS) as a catalyst for increased sustainability in building structures. There are however some hesitation to the adoption of these methods in the construction industry (Yunus and Yang, 2012). The hesitation of adapting these methods can be caused by the lack of understanding from the client, which could be resolved by the early collaboration and involvement of the designers, builders and user/client from the project inception stage through partnering relationships.

In the matters of the construction labour market, Glynn and Taplin (2010) indicate that skill shortages in the construction industry are common and generally the professions are out of touch with the latest of technologies. Therefore, it is imperative that the labour supply into the industry is trained with relevant construction trades and crafts. Wirahadikusumah and Pribadi (2011) identified the need for restructuring of certification/licensing system for construction workforce. Current certification systems in place are overregulated and some are even administered by independent diverse organizations instead of the government. While certificates are important in proving the personnel's competence to work, careful measure must be taken to avoid

overlapping and redundancy, as well as wastage of limited resources in its implementation process.

At the heart of these issues, a prominent challenge actually lies with implementing collaborative working as it has the potential to improve current conditions of the industry and overcome the aforementioned challenges. While the existence of a competent workforce does increase the performance for construction industry, collaborative working is paving the way for more coordinated and flexible method of project delivery. Accordingly, Akintoye and Main (2007) note the latest development in project delivery methods that emphasizes collaborative working such as partnering, joint venture, public-private partnerships and strategic alliances; which stems from the need for coordination and flexibility especially in projects with high complexities and uncertainties within the construction industry (Anvuur and Kumaraswamy, 2007). Rahman et al (2012) highlighted the importance of identifying the readiness for collaborative working prior to engaging the collaborative project delivery method, so that the mutual objectives of collaborative working within all parties involved can be achieved.

Considering partnering is one of the current methods for project delivery, it is therefore important to fully understand the concept of partnering as it is implemented in the construction industry, which is the focus of this chapter. The following sections will highlight the concept of partnering in the construction industry.

2.5 PARTNERING IN THE CONSTRUCTION INDUSTRY

The partnering method is derived from years of perfecting project implementation and delivery methods within the construction industry. It evolves from years of experience, lessons learned, and need identification of the industry players. Traditionally, the construction industry has been accustomed by the competitive bidding, adversarial relationships, divided self-interests, and one-off collaboration in lump-sum contracts (Bresnen and Marshall, 2000; Wood et al, 2002; Sorrell, 2001; Meng et al, 2011). The designer leads the construction team and clients relied on cheapest price contract to protect their interests (Huang, 2011). As for the builders they had to give the lowest bid possible, in order to secure the contract and were

forced to compensate on quality and time in order to achieve profit to survive. According to Cushman et al (2001), claims and disputes were difficult to resolve, as all parties involved were very protective of their interests.

Project management were then introduced in the attempt to resolve the numerous difficulties and disputes, by creating another entity that manages the projects while the designers, builders, surveyors and specialist contractors concentrate on doing what they know best according to their expertise (Forcada Matheu, 2005). The project management entity also has the interests of the clients in mind, and provided the clients who are unfamiliar with the projects with necessary information. Although project management has resolved some of the issues in the construction industry, the problems associated with competitive bidding and dispute resolutions still remain.

The Latham report of ***Rethinking Construction*** has urged the stakeholders and industry players to react proactively in avoiding the negative effect which result from competitive bidding and dispute resolutions. According to Peace (2008), construction partnering was formally recognized in the UK in 1994 following the Latham report. Partnering requires the parties involved to work together in an open and trusting relationship based on mutual objectives, an agreed decision making process and an active search for continuous measurable improvements. Parties opting to implement partnering would have the construction contracts drawn up, with deliverables and measures clearly stated. Oyegoke et al (2009) further state that in some cases, the use of partnering is incorporated in the contract document, while in most cases the tools of partnering is being implemented informally, along with the standard construction contract.

In contrast to the traditional method, partnering help foster pleasant working relationship; which will encourage the partners to collaborate again for subsequent projects. At this point, the partnering is said to evolve into strategic alliance or strategic collaborative working. Peace (2008) argues that the term strategic refers to a certain time expectations, which in this case it refers to the long term relations between parties who are prepared to work together over long periods of time. By this stage, the parties involved are in tune with each other's expertise and knowledge, could possibly share similar working cultures which will result in maximising the

effectiveness of each other's business. Therefore, it can be concluded that partnering can be seen as positive change to improve the industry in terms of project delivery method.

2.5.1 DEFINITION OF PARTNERING

In the recent years, there has been an increasing amount of literature discussing partnering in the context of construction industry. In the UK, the partnering strategy had started to be implemented more widely since the recommendations in the Latham Report in 1994 and the Rethinking Construction report in 1998 (Kumaraswamy and Matthews, 2000; Cox and Ireland, 2002; Mason, 2007; and Jones and Kaluarachchi, 2008). In the US, Australia and Japan, the partnering strategy made its debut in the 90s and have then been made the point of references due to their success in establishing suitable procedures for the selection of subcontractors in public sector contracts (Naoum, 2003). According to Humphreys et al (2003), the adoption of partnering into the construction industry in these countries can be attributed to the fact that the relationships in these industries were commonly lacking trust, respect and honesty between clients, main contractors and subcontractors.

Partnering can be defined in many ways. It generally describes a set of behaviours among firms with shared resources and responsibilities to achieve mutual objectives and perceived benefits. There are efforts to classify the definitions of partnering in construction industry. Barlow et al (1997) had observed that partnering can be defined either as a tool, or as a process. Earlier on, Crowley and Karim (1995) had identified that partnering is typically defined in one of two ways. Firstly, by its attributes such as trust, shared vision, and long term commitment; or secondly by the process where partnering continues to be seen as a verb, such as developing a mission statement, agreeing on goals and conducting partnering workshops. This format of defining the term partnering in the construction industry can be seen up to the present moment. One of the definitions of construction partnering that falls into the first category is the one that is provided by Lu and Yan (2007) whom defined construction partnering as a working relationship between stakeholders based on respect, trust, teamwork, commitment and shared goals. On the other hand, the definition provided by Naoum

(2003) perfectly fits into the second category. Naoum (2003) defines partnering as a concept which provides a framework for the establishment of mutual objectives among the building team with an attempt to reach an agreed dispute resolution procedure as well as encouraging the principle of continuous improvement.

A key definition of partnering, which is commonly cited by numerous partnering literature is provided by the Reading Construction Forum (1995) where partnering is defined as a management approach used by two or more organisations to achieve specific business objectives by maximising the effectiveness of each participant's resources. The approach is based on mutual objectives, an agreed method of problem resolution, and an active search for continuous measurable improvements.

The review of partnering related literature has revealed how partnering is defined in the construction industry. The definitions provided in the following Table 2.2 has shown how partnering is defined based on various conceptual and empirical studies. The following Table 2.2 lists some of the definition of construction partnering in existing literatures.

Table 2.2: Definitions of construction partnering in existing literatures.

Source	Definition
Barlow (2000)	A bundle of business processes designed to enhance collaborations between organizations.
Bayliss et al. (2004)	A method to improve working relationships and project performance in terms of quality, cost and time.
Beach et al. (2005)	A generic term for a variety of formal and less formal arrangements that embrace a range of practices designed to promote a greater collaboration and involve differing time frames.
Bennett and Jayes (1998)	A set of strategic actions which embody the mutual objectives of a number of firms. These are achieved by cooperative decision making aimed at using feedback to continuously improve joint performance.
Cheung et al. (2003)	An approach to manage construction projects, which is regarded as an important management tool to improve quality and programme, to reduce confrontations between parties, thus enabling an open and non-adversarial contracting environment.
Eriksson et al. (2008)	A method that aims to increase cooperation and integration between the actors by building trust and commitment whilst decreasing disputes.
Bresnen and Marshall (2000)	A broad concept that covered a wide spectrum of attitudes, behaviour, values, tools, techniques and practices.
Glagola and Sheedy (2002)	The essence of good business practices. Its roots are founded in the tenets of trust, mutual respect and integrity. It achieves its goals and objectives through open communication, mutual risk taking and profit sharing.
Thomas (2005)	An integrated team-working approach to achieve better value for all partners by reducing duplication and waste of resources, based on mutual objectives, a robust approach to issue resolution and a proactive approach to measurable continuous improvement.
Kwan and Ofori (2001)	An approach that is based on the principles of trust, mutual respect and cooperation towards the achievement of a common goal.
Matthews et al. (2000)	The proactive approach to the management of business relationships, not a technique which establishes rules, regulations, documentations and procedures.
Manley et al. (2007)	An approach that suggests a culture change by which a person's word is her/his bond, where people understand how they responsibilities affect others and the success if the project, and accept those responsibilities.
Naoum (2003)	A concept which provides a framework for the establishment of mutual objectives among the building team with an attempt to reach an agreed dispute resolution procedure as well as encouraging the principle of continuous improvement.
Ngowi (2007)	A form of alliance between parties that are not in direct competition with one another.
Reading Construction Forum (1995)	A management approach used by two or more organizations to achieve specific objectives by maximising the effectiveness of each participant's resources. The approach is based on mutual objectives, an agreed method of problem resolution and an active search for continuous measurable improvements.
Sorell (2003)	A method that greatly reduces the transaction costs of tendering and drawing up contracts. These are replaced by performance measurement and improvement targets for quality, timeliness and costs.
Swan and Khalfan (2007)	Partnering at its most basic level is a non-adversarial approach to procuring and engaging in construction projects.
Lu and Yan (2007)	A working relationship between stakeholders based on respect, trust, teamwork, commitment and shared goals.

Another definition, much simpler yet concise and is widely adopted by construction partnering literature is by Bennett and Jayes (1998) who defined partnering as ***a set of strategic actions which embody the mutual objectives of a number of firms. These are achieved by cooperative decision making aimed at using feedback to***

continuously improve joint performance. This definition by Bennett and Jayes (1998) has become the main starting point of this research, which aims to explore the best strategic approach for partnering through aligning different organizational cultures among various firms in the construction industry. Although this definition is published more than a decade ago when partnering was introduced in the United Kingdom, this definition is still relevant to the current situation in Malaysia which construction industry is just beginning to embrace partnering practices. This definition also inspires the aim of this research not only because it describes the necessity of planned and scheduled actions that has specific purpose in synergizing the resources and collaboration of each parties involved in the partnering team; but also it highlights the importance of feedback in increasing the effectiveness of the partnering team to improve collective performance.

In order to fully realize the many benefits of partnering as the definition implies, it is only logical that the partnering approach must be perfected over a period of time and need to be developed in stages. The following section will describe the stages of partnering identified by current literatures.

2.6 DEVELOPMENTAL STAGES OF PARTNERING

This section will discuss studies that have attempted to identify and differentiate each stages of partnering. Bennett and Jayes (1998) illustrate partnering in three distinctive stages which are termed as first, second and third generation of partnering. The first stage is formed by the construction businesses and their customers who have implemented the model of partnering described in Bennett and Jayes (1995). The second stage is partnering between a group of consultants and contractors who provide the security of long-term strategic alliance to their customer. These consultants and contractors had previously worked on a construction project and will continue to do so with their partners for more projects to come. The third stage of partnering goes beyond just partnering with the same partners. Construction firms who practice the third stage of partnering will organize their business activities to provide continuity in their workloads. At this stage, the supply chain becomes critical to the construction firm, as the main business activity revolves around partnering

relationship within the supply chain to produce specific products designed for specific customers. These specific products provide a steady stream of work for the construction firm. There is a clear difference between stages, and how partnering evolves in these stages can easily be related to actual partnering practice.

Cheng and Li (2001) propose a different set of stages for partnering in the construction industry. They had incorporated several concepts from change management literature and identified the three stages of partnering. The three stages are ***partnering formation, partnering application*** and finally ***partnering completion and reactivation***. Each stage is an independent sub-process and forms the basis of the following stage. The first stage, ***partnering formation***, basically refers to a formal or informal agreement between all parties involved to establish an informal relationship aimed to accomplish a set of mutually agreed goals and objectives. This set of mutually agreed goals and objectives will then be translated into activities during the construction project where all partners will in one way or another provides their inputs or expertise to carry out specific tasks to benefit the partnering relationship as a whole. Consequently in the second stage, ***partnering application***, the partners involved need to learn and experience new ideas and methods which are brought upon by their counterparts. The final stage, ***partnering completion and reactivation*** is where the partners have the intention to collaborate in an informal relationship again with the same group of companies in another construction project.

It is apparent that these separate set of stages for construction partnering have similarities. Each indicate a simple partnering relationship in the first stage and had somehow describe a successful partnering relationship should be ended with the intention to re-establish the relationship in the following construction project. By understanding the different stages needed for a partnering relationship to develop, the specific enablers and factors for partnering which are critical for each of these stages can be identified and made available if not already present. However it should be highlighted that the stages of construction partnering provided by Bennett and Jayes (1998) had gone a step further by including the supply chain in the product realization process. If a construction firm manages to reach the third generation of partnering, the survival of the firm can almost be guaranteed as it is able to generate a steady stream of business in construction industry. This is the ideal stage when achieved will lead to

sustainability of businesses within the industry. However it is also important to identify how the partnering is implemented in the construction industry as a project delivery method. The next section describes how partnering stems from the need of the government sector in funding the continuous development of infrastructures and identify the common manner in which partnering is implemented.

2.7 IMPLEMENTATION METHODS OF PARTNERING

In developing a country, the government is responsible for taking measures to ensure the continuity of development regardless of the economic state of its nation. In the past the government is seen as the sole entity to finance and initiate development projects, however it is not uncommon for the government to entrust the position of financing and initiating the development to the private sector in the recent times. Initially the measures taken to relieve the government of project financing burdens, have then evolved into a quest of efficiencies and value for money. According to Kumaraswamy et al (2007), these efficiencies are expected to result in superior performance levels in creating and managing, and not merely maintaining assets and properties.

The transition from public to market-oriented sponsorship has encouraged the emergence of other forms of procurement in order to add value and efficiency to public sector activities. Partnering is implemented through a number of methods most commonly known as; public-private partnerships (PPP), private finance initiatives (PFI) and private sector involvement (PSI) (Oyegoke et al, 2009). In PPP, the government assumes the primary responsibilities and functions from public to private sector. The PFI method sees the government moving away from its traditional role (finance, ownership, operation) by purchasing of services from the private sector. The PSI is a strategy for improving public services by involving the private sector in selected roles and responsibilities otherwise performed by the government.

In relevance to the context of this research, the PPP method shall be explored and defined in detail. This is due to the understanding of the Malaysian construction industry, where PFI projects are also identified as a subset of PPP according to

Rusmani (2010). The following section will discuss in detail the concept and definition of PPP, as well as the lessons learned from previous case studies in PPP.

2.7.1 PUBLIC-PRIVATE PARTNERSHIP (PPP)

Akintoye et. al. (2003) define Public-Private Partnership (PPP) as a cooperative venture between the public and private sectors for the delivery of a public service through appropriate allocation of resources, risks and rewards. It can simply be seen as means of public sector procurement using private sector finance and best practice (Jefferies, 2006). PPP can involve design, construction, financing, operation and maintenance of the infrastructure and facilities, or the operation of services to meet public needs.

A comprehensive definition of PPP is given by Alfen et. al. (2009) when discussing PPP in infrastructure development. The term PPP refers to a long-term, contractually regulated cooperation between the public and private sector for the efficient fulfilment of public tasks in combining the necessary resources (e.g. know-how, operational funds, capital and personnel) of the partners and distributing existing project risks appropriately according to the risk management competence of the project partners.

Under a PPP scheme, a facility is designed and constructed by the private sector. The private party then will be responsible for managing and maintaining the facility and have control of the facility for a certain period of time as stated in the contract. Within this period, the private party reserves the right to earn income from the operation of the facility. At the expiry of the contracting period, the facility will be handed over to the public sector.

In general, contract period for PPP projects may be anything between 15 to 20 years. In some cases, the contract period had to be extended due to the private party unable to get their forecasted return on the project. This issue will be discussed further in the cases in the next section. The PPP is founded on transfer of risk from public to the private sector under circumstances where the private is best placed to manage risks. Jefferies (2006) had concluded PPP are now established worldwide as a significant

means of developing public services without directly impacting on the government budgetary constraints. The following Table 2.3 portrays the summary of key findings from five PPP cases in various countries, as discussed in Alfen et al (2009).

Table 2.3: Summary of PPP case studies (Alfen et al, 2009)

Type of project	Key features demonstrated	Lessons learned
2nd Stage Cipularang Tollway (Indonesia)	The project was financed using a system called Contractor's Pre-Financing (CPF).	Risk allocation should be properly assigned to the parties involved to avoid problems during the execution of the project.
Yen Lenh Bridge (Vietnam)	The good project governance (GPG) concept was developed to help evaluate the performance of projects that are developed under PPP methods. The performance of projects were evaluated by five key components: 1. Fairness 2. Transparency 3. Accountability 4. Sustainability 5. Effectiveness / efficiencies.	The public party realized that in order to gain private sector participation, full government support is critical. It is important that the stakeholders fully comprehend the differences of risk perceptions among the participants.
River Tunnel Warnowquerung Rostock (Germany)	This project had embarked on a new method of financing called the F-Model.	An overly optimistic traffic forecast has left the private party high and dry, where unrealistic financial returns estimation where made, causing the private party the risk of insolvency.
Laibin B (China)	The tenderer has to finance their own project from a revenue stream based on LOC supporting to off-take agreements instead of guaranteed returns.	Risk should be allocated to the partner who is most capable of controlling and influencing it, while expecting returns should be parallel to the risk borne. In this project the government support is clear, thus enabling the success of the PPP.
Beijing Olympic Stadium (China)	The partnering team stressed the importance of marketability of the project. The search for a concessionaire for the facility had started before th project was completed.	Re-negotiation among partners especially with the government is more efficient and effective to resolve disputes rather than mediation, arbitration or lawsuit. The private interests as well as the public interest should be aligned, in addition to clear contractual arrangements and enforcement being present in order for the PPP project to be successful.

The table above indicate that for PPP to be successful there are several aspects that need to be considered. Issues such as risk allocation, dispute resolution and collaborative efforts among parties involved needs to be addressed if PPP is to be

successful. Furthermore, Akintoye and Main (2007) identified that in order for PPP to be successful; there must be commitment of adequate resources from the partners, equity of relationship, recognition of the importance of non-financial benefits, and clarity of objectives right from the start of the project. Kumaraswamy et. al. (2007) stressed the importance of team selection towards the success of PPP. They presented a framework that indicates how relational contracting approaches and sustainable relationships can contribute to more sustainable infrastructure. In terms of dealing with partners in PPP, Eaton et. al. (2007) suggested that the appreciation of cultural similarities and differences will have implications for the effective project delivery of future PPP projects, which confirms the direction of this research as highlighted in the problem statement for this research.

As any other partnering relationships, PPP has a set of benefits that come with successful implementation. Ng and Wong (2006) had discovered most respondents in their Hong Kong-based study had agreed that the PPP approach can allow higher flexibility, encourage innovation, enhance cost-effectiveness and improve efficiency of work when compared with the traditional term contract in the delivery of maintenance services. While PPPs can be valuable in mobilising and synergising the potential of integrated teams, it must be noted that that PPPs are certainly not appropriate for all scenarios (Kumaraswamy et. al., 2007). Successful implementation of PPP has been recorded in mainly infrastructure and maintenance projects. Jefferies (2006) concluded that within Australia, PPP is more successful in traditional economic infrastructure projects such as roads, but not so in social infrastructure project such as hospitals and schools.

It is clear that from the case studies discussed that there is a need for identifying the enablers or enabling factors of partnering. Enabling factors minimize the risk of failure in partnering venture, if it is identified and worked upon from the very beginning of the project. The identification of these factors is crucial to the parties implementing PPP, as they will be able to incorporate the factors in their activities if not readily available within the industry and increase the chance of partnering success. The next section will discuss the enabling factors for partnering identified by an extensive literature review.

2.8 ENABLING FACTORS FOR PARTNERING

There is massive amount of literature on partnering in the construction industry, and many have attempted to identify the critical elements for effective and successful partnering. The extensive literature review conducted for this research has revealed that there are eight enabling factors most commonly cited by previous authors; collaboration and cooperation, commitment, communication, culture, trust, tools, policies, and procurement. This section will explore these common enabling factors, focusing on how these factors assist the partnering efforts to reap the benefits for partnering.

a. COLLABORATION AND COOPERATION

The effective interaction of parties involved in a partnering venture is greatly aided with the presence of collaboration and cooperation spirit among the participants. Consequently, the issue of adverse relationships in the construction industry can be resolved through the implementation of partnering as it requires the participants to interact in a positive and collaborative manner. This is supported by Bayliss et. al. (2004) and Nystrom (2008) which identified partnering could potentially remedy the negative attitude of construction participants from confrontational to cooperative. Kumaraswamy et. al. (2005) in their study highlighted how the traditional adversarial attitude needs to be transformed into more positive and collaborative thinking to propel the construction industry forwards.

A series of studies by Eriksson (2007) focusing on Swedish construction clients opinion on partnering had revealed that majority of clients perceive increased cooperation among the actors in construction projects to be more important than competition in order to facilitate project success. The clients also believed that partnering is a good method to enhance mutual cooperation, simply by working with the same firms again and again in subsequent projects (Eriksson and Nilsson; 2008). The popularity of partnering practices among clients was also identified by Yeung et. al. (2007) in their study. Prior to that Cheung et. al. (2003) identified that improved working relationships and collaboration between the clients and contractors by implementing partnering practices. The notion is also agreed by other key players in

the construction industry. Similarly, Kumaraswamy and Matthews (2000) have noted that the improved working relationships and collaborative working arrangements that comes with partnering has encouraged the sub-contractors to reduce their pricing levels by keeping in mind the savings that they will achieve through partnering relationships.

Collaborative working and cooperation among construction parties can create a much more pleasant environment when working towards completing a project. This pleasant working environment is much more conducive to increased knowledge sharing, continuous learning and possibly ideas for innovation (Eriksson et. al., 2007; Stewart and Fenn, 2006; Khalfan and McDermott, 2006). Another important result from collaborative working that needs to be considered is how disputes can be handled in a timely manner, with the aid of partnering and initial setting of mutual objectives at the beginning of any partnering relationships, which is noted both by Drexler and Larson (2000) and Bresnen and Marshall, (2000).

It is apparent that collaboration and cooperation is a critical enabling factor to partnering. It not only contributes to averting adverse relationships and improving working environment in a project, but also minimizes disputes among project members which may influence differing opinions and solutions that could in turn affect their personal agenda and commitment. The next section discusses how commitment assists the development of an effective partnering relationship.

b. COMMITMENT

In order to realize the many benefits that come with partnering, it is only natural that the partnering process should be implemented over a certain period of time. However, one of the common problems with firms initially venturing into partnering relationships is that the drive and main reason for partnering may be forgotten along the course of project. Commitment is the ‘glue’ that keeps the drive and reason for partnering together for the parties involved.

Gounaris (2005) defined commitment as the desire for continuity manifested by the willingness to invest resources into a relationship. There are two types of commitment, affective and calculative. Affective commitment is the generalized sense of positive regard and attachment to the other party, while calculative commitment stems from an anticipation of high termination or switching costs associated with leaving from the relationship. Evanschitzky et. al. (2006) indicated that commitment reflects the clients' self-evaluation of the consumption context and the active decision to engage in a long-term relationship with a firm.

Within the context of construction industry, long-term commitment to partnering can be the extent of the willingness of one party to maintain the current partnered relationship with other parties based upon the favourable outcomes. This is where commitment is critical for the success of partnering, regardless of whether it is top management commitment (Bisschoff and Benade, 2008) or project participants' commitment in implementing the partnering relationship and staying with the same ideology throughout the entire project. Other findings (Cheng et. al., 2000; Chan et. al., 2004; Yeung et. al., 2006; and Jones and Kaluarachchi, 2007) also suggest that long-term commitment is necessary for successful partnering relationships.

Bayliss et. al. (2003) in their case study of a partnering project concluded that commitment lies at the heart of all partnering arrangements and it cannot be sustained if there is no realizable benefit. This reflects the importance for commitment in partnering. In parallel to this Chan et. al. (2003) concludes misunderstanding of the partnering commitment is identified as one of the major problems leading to partnering failure.

Revisiting the definition of commitment earlier, it can be suggested that the commitment of participants of subsequent projects following a previous partnering arrangements may begin as calculative in nature, as it is more convenient and cost effective to stay with previous partners than to adjust to entirely new partners. Affective commitment may develop after a number of positive collaborations with the same partner, as the participants will be more in tune with each other's way of working and expertise. The commitment is crucial to ensure parties involved do not waver from the initial onset of a partnering project, in order to fully realize the

benefits that are brought upon by the implementation of partnering. It must also be noted that the commitment of parties in a partnering project can be assisted with effective communication, which another critical enabling factor for partnering.

c. COMMUNICATION

In facilitating the flow of information and sharing of knowledge throughout the project, communication is an important part of any partnering relationship. Communication is the sharing of meaning to reach a mutual understanding and to gain a response, which involves interactions between the sender and receiver of messages. Den Otter and Emmitt (2008) who conducted a series of studies regarding communication between team members in the construction industry defined communication within the context of a construction team as a compilation of all processes for sending and receiving messages between team members individually and collectively using all the available means of communication. According to Den Otter and Emmit (2007) in an earlier study, examples of common means of communication used by the construction team members include paper based project mail and documentations, project drawings, meetings, dialogues, telephone conversations, video conferencing and instant messaging.

Tang et. al. (2005) found that construction practitioners in China believed that future developments in partnering should emphasize factors related to open communication which focus on how to achieve faster and optimum decision making. Open communication between partners is one of the foundations of successful partnering, along with mutual risk taking and profit sharing (Glagola and Sheedy, 2002). Effective means of communication across the whole partnership has been highlighted as one of the prerequisites for performance improvements in the industry. Accordingly, Wang et. al. (2009) has asserted that it is also imperative that effective communication and transfer of information to develop an efficient industry which can cater to the needs of its clients.

Several studies conducted on construction partnering have concluded communication as one of its critical success factors (Black et. al., 2000; Cheung et. al., 2003; Wong and Cheung, 2004; Chan et. al., 2005 and Anderson et. al., 2006). The importance of

communication as an enabler for partnering can be reflected by some studies conducted looking to improve ways of communication between construction partners. Cheng (2001) conducted a study on network communication in the construction industry, and another study by Cheng et. al. (2001) is done to study the infrastructure of partnering for construction projects. In a study conducted among key individuals in a public-private partnership, Jacobson and Sang (2008) identified that a project team would be more effective if communication is open and honest with strong willingness to compromise and collaborate to achieve the project shared vision.

Open and timely communication provides the basis of a sound partnering practice, and can potentially avoid issues such as dispute and mistrust among contracting parties in a project. Faster and optimum decision making can be achieved through effective communication, which is crucial in developing efficiencies within the construction industry.

d. CULTURE

The nature of construction industry where different organizations come together in projects, has contributed in organizations having to adjust one another's culture when working together. Culture is a vital element of partnering as it affects the way partners behave around each other. Within the construction industry itself, culture is considered to be about the characteristics of the industry, approaches to construction, competence of craftsmen and people who work in the industry and the strategies, goals and values of the organizations within which they work (Ankrah and Proverbs, 2009).

The criticality of culture in partnering relationships can be best described by the findings of Bresnen and Marshall (2000) in their study on partnering in construction. Partnering requires a sensitivity to the underlying factors that influence specific ways of working; an understanding of the possible impact on individuals and group motivations and interest; and a full appreciation of the complex dynamic of implementation process. A culture emerges from basic tacit assumptions about how the world operates and what a group of people share that determines their perceptions, feelings and behaviour. There are a number of factors that influence the culture within

the construction industry. Gajendran and Brewer (2007) identified the factors that influence the culture within the construction industry as; adversarial attitudes in contractual claims, culture in procurement, national culture, ethics and culture, cultural change, knowledge transfer, professional cultures and corporate culture. All of these factors shape the overall culture of the construction industry.

Chan et al (2005) went on further to exhibit the importance of culture in partnering by indicating that the most advantageous stage is when cultural capability is achieved by partners, which will encourage them not to find compromises on cultural differences but to find synergy through combining the best characteristics and attributes on any cultural dimension. This is particularly critical in trans-national partnering projects. Culture is critical in determining project delivery outcomes. This is noted by Ankrah and Proverbs (2009) whose study concluded that different cultural orientation may influence project delivery and eventual performance outcomes. Therefore it is important the parties involved in partnering relationships are familiar with the culture of their partners to ensure success in the project.

There had been attempts justifying certain local cultures to the industry's receptiveness of partnering in construction. For example, the study conducted by Ang and Ofori (2001) on the impact of Chinese culture towards the implementation of partnering among Singaporean contractors. It is identified that, while the Chinese culture supports the requirement of successful partnering, the Chinese contractors need to abandon their mutual distrust. Their study later concluded that the use of Chinese culture to enhance partnering would contribute significantly to efforts to solve the problems.

Akintoye et. al. (2000) had described that the biggest issue with collaborative working within the supply chain is the inappropriate culture that is inherent in the construction industry. It supports the premise that culture is a major success factor for partnering in construction, which is supported by the findings of a study on housing partnering projects conducted by Packham et. al. (2005). They identified that while partnering culture takes time to be established, the success of partnering relies heavily on the cultural change in the construction industry. Continuous partnership relationships established in the construction industry can change the culture in the construction

industry over a period of time (Wood and Ellis, 2005). Manley et. al. (2007) stated that partnering suggest a change to a culture in which a person's word is her or his bond, where people understand and fully aware of how their responsibilities affect others and the success of the projects. It can be said that culture is an important variable in relationship creation and network formation.

It must also be highlighted that sharing of culture by partners in an alliance made it easier for them to trust each other and allow them to progress further to building the alliance faster (Ngowi and Pienaar, 2005). This is confirmed by Fletcher and Fang (2006) who stated that a key element in successful partnering is the need for executives to understand the impact of culture on the relationships they create and the networks they form. The learning process and knowledge sharing between partners is greatly assisted when trust is present, and because of this fact culture is also important in improving the industry's innovativeness as described by Ivory (2005).

The literature has revealed that having the appropriate culture will enhance partnering success, even more so if the partners share similar culture. As culture governs the way partners operate, aligning different cultures among partners is the key to ensuring other enabling factors can be developed properly, in line with the needs of partnering. The presence of similar culture fosters trust building and consequently mediates the core processes of partnering. The next section will further discuss trust as one of the enabling factor for partnering, which is assisted greatly with the presence of culture.

e. TRUST

The enabling factor of trust in partnering enhances working relationships and could solve some issues that may arise with collaborative working. The issue of trust in partnering has been widely researched, and is commonly cited as one of the most important critical success factors to successful partnering (Akintoye et. al., 2000; Ang and Ofori, 2000; Drexler and Larson, 2000; Olsson and Epsling, 2004; Beach et. al., 2005; and Chan et. al., 2005). With the aid of trust; disputes, misjudgements and unanticipated needs can be effectively managed and dealt with in a way that can benefit all parties involved (Matthews et. al., 2000; and Olsson and Epsling, 2004).

The importance of trust is highlighted by Crespin-Mazet and Ghauri (2006) in implying that positive atmosphere based on trust between all parties involved is required to engage in a partnering relationship. The presence of trust also entails to what extent the partners are willing to share their knowledge and resources (Yiu and Cheung, 2007); and in some cases possibly sensitive information that may jeopardize an organization's competitiveness in the industry, but essential to the partnering success. Trust-based relationships are concluded by Lazar (2000) to be critical to maximising positive economic outcomes form partnering and may be necessary to keep the owner/contractor relationship from deteriorating.

However it must be highlighted that like any other positive behaviours, trust can and will deteriorate without consistent pattern of behaviour for support. Complacency stifles trust building, therefore monitoring partnering is a must (Cheung et. al., 2003; and Karlsen, 2008). Kumaraswamy et. al. (2005) found that the trust levels in the construction industry are still considerably low, in contrast to the widespread acceptance and appreciation of the need for collaborative working approaches such as construction partnering.

The challenge in developing and maintaining trust among partners requires total effort by all parties involved. This challenge is even greater within the construction industry due to its history of adverse relationships. Therefore, practitioners implementing partnering should apply specific measures to develop and maintain trust. These specific measures are commonly in the form of specific tools for partnering, which will be described in the following section.

f. TOOLS

Tools are an essential element of partnering as they provide the necessary reinforcement throughout the partnering relationship. Whilst moving towards a culture of complete trust and mutual commitments, it is still necessary to install some checks to avoid abuse and misuse of such relationship (Palaneeswaran et. al., 2003). This is where partnering tools becomes indispensable. Common tools used for partnering process include workshops, meetings, partnering charter and partner feedback monitoring system (Bayliss et al, 2003). According to Anderson et al

(2006), some partnering relationships may develop their own specific tool better suited to monitor their partnering initiative and interests. The following Table 2.4 lists the examples of partnering tools that has been mentioned in partnering literatures.

Table 2.4: List of effective partnering tools from various partnering literatures.

Source	Type of partnering tools
Cheung et. al. (2003)	This study concluded that the use of a software called the Partnering Temperature Index (PTI) to monitor partnering performance through an open, on-line platform where authorized people can access specific information at any time and place can be very useful to ensure partnering success.
Bayliss et. al. (2004)	This study noted two most effective partnering tools, namely monthly review meetings and incentivisation agreement.
Yiu and Cheung (2007)	This study focuses on construction mediator tactics for use in construction alliances. The two most effective tactics are reality test and trust building.
Li et. al. (2001)	This paper proposes that co-operative benchmarking is an effective tool that can be used to support partnering in construction.
Kaluarachchi and Jones (2007)	This study identified training as an essential ingredient in the partnering process.
Anderson et. al. (2006)	This case study of a successful partnering project had concluded that the partnering workshop, regular meetings and a project specific online rating system are the key partnering tools that ensured the project success.

The importance of partnering tools to maintain the spirit of partnering throughout the partnering process is widely accepted. However, there seems to be little mention about effective tools to sustain partnering efforts in existing literatures. This could be due to partnering still in its infancy within the construction industry and the best format of partnering and tools that shape it are still undefined at present.

g. POLICIES

The construction industry is normally bounded by governmental policies and regulations. Governmental policies and regulations may affect the industry's receptiveness towards partnering. The importance of policies in achieving successful partnering can be reflected in the findings of a study conducted by Eriksson and Nilsson (2008) among Swedish construction clients. They had established that in countries which industry norms of partnering exist there may be also a need to increase understanding of how to interpret policies and implement partnering.

For instance, in the UK partnering gain its popularity with support from governmental policies and recommendation. The UK government started to promote partnering through PFI in their public sector projects as measure to improve the industry, as recommended by the Latham report (1994) and the Egan agenda (1998). Manley et. al. (2007) in their study had noted how the construction industry is watching and waiting to see if the government is genuine in its endorsement of partnering. Policies will ensure certain idealism is passed on, which in turn will create awareness among construction industry players and provide enough interest for them to initiate the partnering approach in their own subsequent projects.

Koraltan and Dikbas (2002) conducted a case study on UK partnering practices to see if the practices are applicable in Turkish construction industry. They had identified that private sectors are more accepting of partnering approaches in contrast to public sectors. This could be due to the fact that the private sectors have the flexibility to change and are not faced with the types of rigidity inherent in public sectors. The study of Ng et. al. (2002) had also reflected the need for public clients to ease their unnecessary restrictive regulations and administrative procedures to improve the contractor's financial position in a public partnering project.

Governmental policy has been noted as one of the key influences in promoting a new technique or products in the construction industry, simply because the government is one of the biggest clients in any construction industry. However, the current partnering literature seems to be lacking especially how some governmental policies can act as promoters or barriers to the industry's acceptance of partnering approaches. As mentioned by the researcher previously, this could be due to partnering being still in its infancy within the construction industry and the type of policies that supports effective partnering are still undefined at present.

h. PROCUREMENT

Over the years, the conventional bid and tender system had contributed to the negative competitiveness in the construction industry. Firms compete against each other to submit the lowest price for tenders, which could potentially cause some aspects of quality and innovative solutions to be forsaken to make way for massive cost savings.

Open tendering was increasingly being regarded as out-dated, and more contractors prefer to build partnerships with the client (Akintoye et. al., 2000). Ang and Ofori (2001) stressed the importance of appropriate procurement method as a major determinant for project performance in their study.

One of the main strength of partnering lies in its procurement systems, where contractors are included in the design stage much earlier in order to come up with the best solution and higher quality standards in the construction project without compensating their profit margin. This is confirmed by Black et. al. (2000) in a study of partnering success factors in the UK, identifying that partnering procurement methods aims to eliminate adversarial relationships between client and contractor by encouraging the parties to work together towards shared objectives and achieve a win-win outcome. A more recent study findings by Pesamaaet. al. (2008) indicated that partnering procurement procedures enhances cooperation between clients and contractors.

Through partnering, some adjustments in procurement methods have been implemented. More often, these adjustments include a new approach in risk appointment among project partners (Naoum, 2002). In a university library building project, the partnering approach was chosen as it would be a relatively low risk solution when compared to other procurement methods (Hunt, 2008). Positive response was also received from a survey done among UK main contractors towards alternative procurement method through the partnering approach (Wood and Ellis, 2005).

Partnering advocates more flexible procurement systems which may not only benefit the client of a better solution and quality end product, but also adds constructability to the project design and less cost-related disputes. With a different way of procurement, conventional tendering cost and contract documents cost can be reduced. Sorell (2003) found that through flexible partnering procurement, previous tendering costs were replaced by performance measurement and improvement targets for quality, timeliness and costs. Win-win relational contracting approaches such as alliancing and partnering could act as channels for clients and contractors to achieve excellence by providing quality with greater value (Palaneeswaran et. al., 2003). Straub (2007)

confirms this by indicating that a long term partnership form promises more benefits inhered in new procurement approaches than price and performance agreements. The industry needs a revamping whereby long term view of value is the main outcome of all construction projects. A radical change for a more flexible procurement methods to deliver value added product and improved performance is necessary for change.

Although there are many positive observations of procurement and partnering success, there are several contrasting opinions that must be taken into account. These opinions may provide some insights of underlying problem that could be the reason why partnering efforts are still unsuccessful even though the flexible procurement approach is present. Phua (2006) had found out that firms are inclined to use partnering not because it is seen as a superior procurement method that could possibly increase profits and competitiveness. Firms applied partnering to take advantage of the industry norms and because of the industry's pressure to do so (Phua, 2006). This could indicate that the key players in the construction industry may not believe the benefits that may come with the application of partnering approach despite the suggestion by many partnering literatures. Possibly in these cases, the benefits of partnering are viewed as an added bonus, which were considered possibilities and not necessary outcomes.

Another interesting finding relating to partnering and procurement is made by Nystrom (2008) in his study which identified that half of the projects that mentioned partnering in the tendering documents did not include partnering components during the project. This may confirm the findings of Phua (2006) whom had earlier implied that partnering was adopted to be in the 'good face' of the industry, rather than for its widespread belief of benefits.

Although there are differing opinions on partnering procurement methods, it is imperative that the procurement method in use should appeal to the practitioners in the construction industry for partnering to be successfully implemented. A thorough needs assessment should be conducted prior to finalizing the details in the procurement approach for partnering, as it should reflect the collaborative, trusting and open-communicative manner of the partnering concept itself.

Section 2.9 has discussed in detail the commonly cited the 8 enabling factors for partnering and how these factors contribute to partnering success. It is important that all parties involved understand and develop these factors to ensure smooth implementation of partnering in the construction industry, so they can benefit from the outcomes of successful partnering. The next section will explore the outcomes of successful partnering, as noted by previous studies.

2.9 OUTCOMES OF SUCCESSFUL PARTNERING

Various partnering literature have attempted to identify the outcomes of successful partnering. Black et. al. (2000) had indicated that the most obvious outcomes of successful partnering relationships are less adverse relationship among partners, increased customer satisfaction, and increased understanding of partners. Table 2.5 below entails the many outcomes of successful construction partnering.

Table 2.5: Outcomes of successful partnering from various partnering literatures.

Sources	Successful partnering outcomes
Black et. al. (2000)	Less adverse relationship among partners, increased customer satisfaction & increased understanding of partners
Bresnen and Marshall (2000)	The avoidance of potential claims and disputes & benefits of early and repeat contractor involvement
Crane (2001)	Greater understanding of the design concept, the opportunity to explore alternatives, pooling of specialist resources & team approach to solving problems
Cheung et. al. (2002)	Cooperation, open communication, problem solving
Love et. al. (2002)	Problem solving process, project performance, knowledge and competence of workforce, inter-organizational relationships & stakeholder satisfaction
Palaneeswaran et. al. (2003)	Reduced friction in the supply chain, fewer barriers, less wastage of resources, improved relationships and transactional economies & enhanced value and harmony
Henderson and McGloin (2004)	Synergies, integrated infrastructure, & stability for construction industry
Chan et. al. (2005)	Improved relationship amongst project participants, improved communication amongst project participants & better productivity and reduction in dispute
Fortune and Setiawan (2005)	Better quality, & more value for money
Ngowi and Pienaar (2005)	Complementary capabilities & sharing of expertise
Tang et. al. (2006)	Other methods such as TQM can be facilitated, when combined with incentives.
Manley et. al. (2007)	Cost savings, less disputes & better claims management
Turner et. al. (2007)	Successful engagement of all stakeholders, maximising opportunities for improvements and in effective design & cost effectiveness
Nystrom (2008)	Improved communication, improved relationships between parties involved & better project quality

The outcome to successful partnering can be realized by adhering to the partnering concept, as well as ensuring that all enabling factors are developed and present within the partnering alliance. However to minimize the risk of failure, it is important that parties involved recognize the possible barriers to partnering and take preventive measures to avoid them. The next section compiles the barriers to partnering as cited in literatures.

2.10 BARRIERS TO PARTNERING

To ensure that the potentials of construction partnering are fully realized, it is important to identify and minimize if not eliminate the barriers of construction partnering. Contrary to this, Black et. al. (2000) had found from their survey that the barriers to construction partnering are rated less significant than the potential benefits. The more recent study by Bresnen (2007) had noted that the challenges involved in developing a partnering relationship are numerous and difficult. It could be that some of these barriers were discovered as partnering practices matures and become more popular in construction industry.

The extensive literature review conducted has revealed that lack of trust, lack of common goals, underbidding contracts and personnel issues are the common barriers to partnering. These barriers are discussed in detail below.

a. LACK OF TRUST

Trust is one of the underlying key enablers in successful partnering relationship. Past frameworks have been developed to assist in measuring trust and therefore help in building a successful partnering relationship. Because of this, lack of trust is often cited as one of the most common cause of partnering failures (Drexler and Larson, 2000; Packham et. al., 2003). Consequently, Glagola and Sheedy (2002) noted that lack of trust can also leads to partnering parties having reservations in fully committing to the partnering relationship due to past adversarial experiences.

b. LACK OF COMMON GOALS

It is crucial that all parties involved in a partnering relationship have a common goal, to continuously focus all effort and knowledge required in realizing that common goal. Lack of common goals will cause the partnering team to have divided interests and may lead to dispute when contributions are not equal within the team (Glagola and Sheedy, 2002; Packham et. al. 2003). Lack of common goals may also lead to changes in scope and schedule when parties involved have different priorities in the project (Drexler and Larson, 2000).

c. UNDERBIDDING OF CONTRACTS

Both study by Drexler and Larson (2000) and Glagola and Sheedy (2002) have cited underbidding contracts or low-bid mentality in procurement practice is detrimental to successful partnering in construction industry. Although the industry is traditionally shaped to give preference to lower tender price in bidding, the problems caused by low-bidding to the end of construction projects may have provided the awareness for the industry players to find a different method of procurement that will not just favour the clients in terms of price but also to the contractors' profit margin. The low-bid mentality may deter the spirit of partnering among parties at the lower end, and go against the main principle of partnering which is win-win situation for all parties involved.

d. PERSONNEL ISSUES

It is imperative to have the right people with the right attitude working in the partnering relationship. Some of the barriers relating to the personnel include ego or personality indifference, working level commitment, lack of understanding and failure to perform (Glagola and Sheedy, 2002; and Drexler and Larson, 2000). Therefore, there is always a possibility that the vision and commitment of the top management who advocated partnering do not transfer to the personnel who are hands-on with the partnering project.

Up to this point this chapter has explored; the construction industry scene, the key players and its current issues, the concept of partnering, the definition of partnering, its stages, implementation method and enabling factors, as well as the outcomes of successful partnering and barriers to partnering. The literature review has provided the broad picture of what is required for partnering to succeed. Equally important to these concepts, are the strategic approaches developed by previous researchers to facilitate the process of partnering through highlighting certain aspects of partnering. The next section will discuss these strategic approaches in the form of frameworks, models and guidelines and categorizes these approaches to record current knowledge in partnering.

2.11 STRATEGIC APPROACHES FOR PARTNERING

At present there have been many attempts to develop with frameworks, model and guidelines to assist in achieving the full benefits of construction partnering. Some of these frameworks, models and guidelines were built on the foundations of findings from previous studies, and some were developed and tested for the first time. The following Table 2.6 categorizes the frameworks, models and guidelines according to different aspects of partnering. The rest of this section will discuss each of these aspects in detail.

Table 2.6: Strategic approaches for partnering in construction

Partnering aspects / Source of framework/model	Relational	Cultural	Component & Factors	Procurement	Trust	Stages	Communication	Innovation, Performance & Outcome
Cheng & Li (2001)	X	X						
Nystrom (2005)			X					
Ngowi & Pienaar (2005)	X				X			
Chan et. al. (2005)			X					
Cheng & Li (2002)	X					X		
Cheng et. al. (2001)							X	
Lu & Yan (2007)			X					
Chan et. al. (2005)			X					
Crespin-Mazet & Ghauri (2006)				X				
Pesamaa et. al. (2008)				X				
Palaneeswaran et. al. (2003)	X							X
Cheng & Li (2005)	X					X		
Yiu & Cheng (2007)	X							
Li et. al. (2002)	X							
Love et. al. (2002)	X							
Karlsen et. al. (2008)	X				X			
Olsson &Epsling (2004)			X					
Jacobson & Sang (2008)			X					
Sidwell & Budiawan (2001)				X				
Barlow & Koberle-Gaiser (2008)				X				
Kumaraswamy & Dulaimi (2001)								X
Ng et. al. (2002)			X					
Gullick et. al. (2007)			X					
Mason (2007)			X					
Yeung et. al. (2007)a								X
Chen & Chen (2007)			X			X		
Bisschoff & Benade (2008)								X
Manley et. al. (2008)								X
Anderson et. al. (2006)			X					
Franco et. al. (2004)								X

- ***Relational*** **-** As partnering is made of two or more different parties working together to achieve a common goal, it is natural that the issue of relationships between these parties are brought up frequently in many construction partnering frameworks and model. Li et. al. (2001) came up with a process model (COBAP) that enables partnering to evolve from a single project agreement to a long-term alliance. The main premise of their model is that cooperative benchmarking can be applied as an effective tool to support partnering in construction. (Co-operative Benchmarking Approach to Partnering) COBAP can be applied in partnering practices when bidding for new contracts, executing new contracts and realizing organizational growth. Another model that is based the relational aspect of construction partnering is the one that is proposed by Love et. al. (2002). This learning model is developed for long term alliances to gain advantages over competitors through the implementation of a customer-supplier focus and strategic relationships. Thus model was tested and results indicated that cooperative results can be used to cultivate a climate for mutual learning and trust whilst remaining focused on the alliance objectives.

  Partnering is frequently being mentioned as way of avoiding adversarial relationships in the current construction industry and giving a pleasant means of dispute resolution through cultivating positive relationships among construction parties. To test this theory, Yiu and Cheng (2007) tested a model developed by Lim et. al. (1990) and discovered that the outcome most responsive to construction mediation tactics is win-win settlement, which is the basic proposition of partnering.

- ***Component and factors*** **-** In order to determine what makes partnering work it is imperative that the component and success factor of partnering can be identified to ensure the partnering effort is on the right track. Most framework and models in partnering stressed the importance of the existence of the right component and factor to enable successful partnering. Nystrom (2005) came up with a model to identify partnering by looking at its components. Using the Wittgenstein-family resemblance concept, this model is made up of partnering component 'petals' and 2 centre most essential partnering component 'petals' arranged in a flower layout. If the studied case covers the 2 centre components can some of its petals, the case can be termed as partnering. With his model, different combinations of partnering petals can be tested and evaluated.

In a study to identify critical success factors of partnering, Cheng et al (2000) suggested a framework for partnering in construction. This particular framework highlights contextual characteristics and management skills. 5 guidelines to initiate partnering were also provided in their study.

The framework for partnering in maintenance project was developed by Olsson and Epsling (2004). Maintenance projects are different from the usual construction project as they are continuous in nature, as opposed to one-off construction projects. The tested framework revealed necessary success factors for maintenance partnering relating to mutual trust, incentives for improvement and integrating client's tacit knowledge into planning and operations. With the rising popularity of PPP/PFI projects recently, a framework to identify necessary components for partnering in PPP/PFI projects was developed by Jacobson and Sang (2008). The framework is a matrix to review 2 success factors of partnering. They had identified that the matrix that focused on the factors of communication and compromise demonstrated that a project team will be more effective if communication is open and honest with strong willingness to compromise and collaborate to achieve the project's shared vision.

Lu and Yan (2007) suggested a planning assessment of partnering use prior to its implementation. They developed the Applicability Assessment Model of Partnering (AAMP) that supports a planning process that will evaluate the applicability of partnering in a given situation. This model is helpful particularly in identifying the period of partnering suitable with different parties in the construction industry.

Apart from the model and framework to describe the components and factors of successful partnering, several studies have attempted to come up with the guidelines with specific components to ensure smooth sailing in partnering ventures. Ng et. al. (2002) listed 14 key elements to successful partnering and a recommendation for public clients to engage in partnering. A recommendation for partnering with specialist contractors had been suggested by Mason (2007). Anderson et. al. (2006) and Gullick et. al. (2007) had suggested best practices for project partnering.

- ***Procurement*** **-** The issue of procurement is critical in any construction contracts. In partnering, it is even more important as most partnering ventures will evolve into long

term strategic alliances. In order to test the best type of procurement in construction partnering, several studies had developed frameworks, models or outlines to be applied. An outline for risk minimization of tendering contract breach in the competitive tendering process was suggested by Sidwell and Budiawan (2001). The competitive tendering method is primarily driven by factors other than price. This alternative contractor selection method takes into consideration a process in which evaluation includes price.

Crespin-Mazet and Ghauri (2006) developed a framework to capture the reality of co-development versus bidding. The framework was tested and conditions that increase the viability of co-development were determined. It was identified that the moderators, relational congruence and project functional challenge did influence the choice of procurement routes by the customer.

Cooperation is a crucial factor in construction partnering. In line with this, Pesamaa et. al. (2008) proposed an alternative procurement model based on cooperative procurement procedures that facilitate cooperation between contractors and clients in construction projects. The model is based on 4-multi item constructs namely incentive-based compensation, limited bidding options, partner selection and cooperation. The model had helped identified that pre-selection processes is enabled by partner selection based on task related attributes and directly affects cooperation.

- ***Trust*** **-** Realizing the full potential of partnering requires the element of trust to be inculcated within the partnering parties. This is the basic idea of a framework suggested by Ngowi and Pienaar (2005). The framework was developed to build and maintain trust within construction alliances. The findings showed that the sharing of culture by the partners in the alliance made it easier for them to trust each other and proceeded with the efforts of building the alliance more quickly.

  Trust is also important in project-stakeholder relationship. Karlsen et. al. (2008) conducted a study to investigate how trust can be built in a relationship between a project and its stakeholders. A model for trust building in project-stakeholder relationship was proposed and then tested. The results indicate that stakeholder reliability and open communication from project participants are important in trust building.

- ***Stages*** **-** There are also some frameworks that emphasize on the stages of partnering. Cheng and Li (2002) examined a customized model of partnering process in order to highlight the relationships between the critical success factors and individual partnering process stages. A number of critical success factors were studied in 3 different stages of partnering namely *partnering formation*, *partnering application* and *partnering completion and reactivation*. The results highlighted that partnering establishments should be viewed as a process with different stages. In a following study, they tested this model again using Analytical Network Process (ANP). It involved the formation of super-matrix that specifies the relationships between elements within the process model and the generation of limit matrix that prioritizes the relative weights for the elements. Through this study, it was determined that partnering reactivation stage is the most important, followed by partnering application and partnering formation.

  Another attempt to classify partnering into stages was made by Chen and Chen (2007). They proposed a process model that separates project partnering process into 3 phases which are *pre-project partnering phase, project partnering phase,* and *post-project partnering phase*. The application of the model had resulted in the identification of 19 critical success factors which are divided into 4 clusters namely *collaborative team culture, long-term quality focus, consistent objectives* and *resource sharing*. It was also identified that the most significant influence of construction partnering output is collaborative team culture.

- ***Communication*** **-** Cheng et. al. (2001) proposed a communication mechanism in construction partnering. The mechanism suggested is a partnering information infrastructure framework with some core functions such as receiving and coding, and supports the running of partnering under real environment as well as virtually. The framework has addressed the clarification of the roles of communication and improved the productiveness of communication.

- ***Innovation, outcome and performance*** **-** Innovation has also been cited as a possible output of partnering in construction. The strategies that promote innovation among construction firms were studied by Manley et. al. (2008). One of the business strategies

that can lead to innovation among construction firm is participating in partnering and alliances in construction projects.

Kumaraswamy and Dulaimi (2001) proposed a framework to facilitate innovations through suitably empowered individuals and more developed institutions. This framework has provided an insight how establishing a competent partnering team can lead to a more innovative output in the construction industry. More recently, the current public procurement model in the UK was tested by Barlow and Koberle-Gaiser (2008) to see how it can influence innovation in design. Their study had identified that the current form of PFI is possibly less effective in stimulating design innovation. In their opinion the model should include incentive mechanism for partners to consider quality and efficiency improvements to attract the innovative potential of the private sector.

Knowledge creation and sharing are also key factors to innovation. Franco et. al. (2004) came up with a framework that allows reflective evaluation of past project actions which enables learning process and knowledge creation. The framework is known as Cross Organizational Learning Approach (COLA).

The partnering outcome has proven to be one of the many reason why firms choose to adopt partnering. In order to identify the benefits of partnering, several frameworks have been formulated to predict, if possible, better performance with the application of partnering. Palaneeswaran et. al. (2003) proposed a relationally integrated supply chain model that provided a means to identifying relevant best practice and innovative relational approaches that aim at better performance. Yeung et. al. (2007)a developed a model to objectively measure the performance of partnering projects. Bischoff and Benade (2008) came up with a model to identify the influences of partnering benefits, which application had revealed that partnering benefits relates to the effectiveness and the applicability of partnering to the type of project conducted.

2.12 GAPS IN PARTNERING KNOWLEDGE

To this point, the discussion in this chapter has provided some key definitions of partnering and identified that partnering can be described as a set of tools, attributes or as a process. The basic stages of partnering were also discussed to give a clearer picture of how a partnering relationship evolves in a construction project. The definition of PPP and past case studies has also been explored to further describe the practice of partnering. From the literature search on construction partnering, some widely cited enabling factors for partnering were extracted and the manner they influence partnering success had been presented. Although there are conflicting views in which factors are needed and which are not, there are a general consensus within the literature that some elements are required for partnering to be successful. The previous sections have compiled and discussed the enablers of partnering essential in forming a generic pre-requisite for partnering to be implemented in the construction industry. It has also been noted that the tools, culture and policies enabling factors for partnering are much less studied compared to the other enablers, however their role in enabling partnering are highlighted nonetheless, indicating more knowledge is needed within these areas.

The frameworks, models and recommendations produced by previous studies were also discussed by looking at the aim and findings that result from their testing. It must be highlighted that there is relatively little number of frameworks for partnering which concentrate on the cultural aspects of the partnering firms. This could be due to in the early years partnering was implemented, the construction industry focused more on enabling its collaborative, commitment and trust aspects, as well as formulating the appropriate procurement methods for partnering projects. Once these components are fully developed over the years, the role of the human factor which is affected by culture in driving the partnering relationships forward becomes much more prominent, and is therefore given much more importance. This reflects a need in studying the role of culture in making partnering a success, which gaps in knowledge shall be fulfilled with this research, by looking at whether partnering is assisted with aligning the different organizational cultures which exists in different construction firms.

2.13 SUMMARY

This chapter has explored the current situation of the construction industry, and some of the current issues faced by the key players within the industry. The composition of the construction teams and the issues arising from the interaction of these parties has required the need for a solution towards collaborative working within the industry. This is where the concept of partnering is introduced, to eliminate the negative issues resulting from adverse relationships in the construction industry.

This chapter then progressed to explore in detail the basic concept of partnering, its definition, barriers and benefits. Next, PPP is introduced as the implementation method of partnering (in relevance to the Malaysian construction industry) and the past case studies on the implementation of partnering are also reviewed. The case studies have brought to light some of the issues faced by the construction industry and practitioners with regards to partnering implemented through the form of PPP.

In identifying the enabling factors for partnering, the extensive literature review conducted has revealed that there are 8 common enabling factors for partnering; collaboration, culture, commitment, communication, policies, tools and procurement. These factors are considered the basic ingredient for the realization of partnering. It is therefore crucial to determine if these factors have existed in the Malaysian construction industry to gauge the acceptance of the partnering project delivery methods among the practitioners, as set in Objective 3 of this research. These factors will be incorporated for testing in the data collection stage.

Apart from that, this chapter has also categorized the frameworks and models for partnering, as found in current literatures. Although culture is noted by many past literature being one of the enablers for partnering, there seem to be little mention on a strategic approach for partnering which considers the variation of organizational culture which exists in the construction industry. The categorization of frameworks and models has led the researcher to confirm the current gap in partnering knowledge, in which that there are significantly fewer models/frameworks established for the purpose of aligning different organizational culture among various firms in a partnering relationship.

The findings from this chapter inform the researcher on the current happenings within the global construction industry which impact on the Malaysian industry, has brought to light the many challenges faced by the Malaysian construction industry in implementing partnering. The following Chapter 3 shall discuss provide the background Malaysian construction industry; the partnering efforts within the industry and the cultural antecedents of the Malaysian construction industry. The next chapter shall also highlight the specific characteristics of the industry where players are comprised by multi-racial and ethnicity background which contributes to some specific challenges where culture is concerned. It is therefore important to identify the basic concept of organizational culture before progressing any further with this research. The latter part of Chapter 3 will highlight the role of organizational culture in assisting partnering success, the concept of organizational culture, the typology of organizational culture and the various methods of assessing organizational culture.

CHAPTER 3

THE MALAYSIAN CONSTRUCTION INDUSTRY AND THE IMPORTANCE OF ORGANIZATIONAL CULTURE IN PARTNERING

3.1 INTRODUCTION

Although partnering exists in developing countries and appropriate models for partnering are established in the current literature, these models are not fully utilized in Malaysia. It was determined in Chapter 2 that for partnering to succeed, the key factors of partnering must be present. However, it must be noted that Malaysia is a multicultural country with various ethnicities which may create specific challenges, and at present there is no evidence of a framework for partnering in a multicultural developing country. This chapter will discuss the cultural issues that are to be considered in partnering in order to assist this research in reviewing the challenges that are faced by partnering in Malaysia. While there are numerous studies conducted regarding the issue of culture within the partnering context, there seem to be little amount of partnering frameworks or models that take organizational culture into consideration. Within the construction industry, the aspect of organizational culture is especially important for Malaysian practitioners who belong to different cultural and ethnicity background, for providing these individuals a common ground in their daily business activities. For that reason, a framework for effective partnering which aligns organizational cultures will be beneficial and significant contributions to assist in the implementation of partnering in the Malaysian construction industry.

Accordingly, this chapter explores the cultural antecedents of the Malaysian construction industry. It begins with discussing the background of the Malaysian construction industry. Next, the evolution of procurement methods in the Malaysian construction industry is explored. The discussion progresses to acknowledge the current efforts in implementing partnering from the Malaysian government, as well as identifying the specific authorities in partnering procurement method. The challenges which are pertinent to the Malaysian construction industry will also be explored, which will further alleviate the need for partnering as a solution to these challenges. In line with the findings from Chapter 2 which highlights the lack of evidence linking effective partnering to culture, later sections of this

chapter shall review the Malaysian culture, the general concept of organizational culture and methods for assessing organizational cultures to provide a full understanding of what makes organizational culture crucial to partnering. The types of organizational culture which are present in other Malaysian industries will also be reviewed, which will then lead to the evaluation of the best method for assessing organizational culture in the Malaysian construction industry. The findings from the literature review conducted in this chapter will add to the understanding of the researcher as well as reinforcing the basis of the sequential methodological steps undertaken in this research.

3.2 THE MALAYSIAN CONSTRUCTION INDUSTRY

Malaysia is a federal constitutional monarchy in Southeast Asia. The country is made up of thirteen states and three federal territories, with a population exceeding 27.5 million people. The total landmass of Malaysia is 329,847 square kilometres (127,350 sq mi) separated by the South China Sea into two similarly sized regions; Peninsular Malaysia (known by the locals as West Malaysia) and Malaysian Borneo (East Malaysia). The mainly populated states/federal territories are Kuala Lumpur, Putrajaya, Selangor; which are all in the central region of Peninsular Malaysia, Penang within the northern region and Johor in the southern region of Peninsular Malaysia. The capital city of Malaysia is Kuala Lumpur, while Putrajaya is the seat of the federal government.

Malaysia has gained its independence from British in 1957. Since then, the Malaysian construction industry has developed from a low-tech, labour-intensive, craft-based industry to one that has the capacity to deliver impressive buildings and infrastructure using highly mechanized production techniques as seen in the Petronas Twin Towers project, as well as the Kuala Lumpur International Airport. Accordingly, Kamal and Flanagan (2012) noted that Malaysia has a two-tier construction industry in reference to the size of firms. In general, the industry is split into two segments; the larger firms concentrating in urban areas and penetrating the overseas market, mainly in the Middle East and the rural construction companies, mostly categorized as SME firms. The majority of SME firms in the construction industry still operate in a traditional way by choosing to use systems that are inefficient, slow and labour intensive, and their main motivation is just to survive (Kang, 2012). The different tiers has somehow contributed to the problem in the Malaysian construction industry, as larger firms with bigger capacity continue to be able to engage in more sophisticated and

higher returns project; inevitably adding points to their already impressive portfolio. On the other hand, the SME firms which made up 90% of the entire industry (Kamal and Flanagan, 2012), are only able to participate in smaller and less return rural construction projects.

With the changes in the world economy, the Malaysian construction industry is constantly affected with the positive and negative aspects of development and wealth. The emerging power of the Far East Asian economies has in a way impacted Malaysia due to its proximity to this nation and similar cultural backgrounds. These recent developments have driven the evolution in Malaysian construction procurement system. The next section explores the project procurement methods applied within the Malaysian construction industry, and the challenges pertaining to those methods. Exploring the background of procurement methods in Malaysia will assist in a better understanding on the constraints and problems that originated from these methods, which will be resolved by the implementation of partnering.

3.3 PROJECT PROCUREMENT METHODS IN MALAYSIA

Through the years, the Malaysian construction industry has undergone changes to counter new challenges and demands of various industry segments. A recent study conducted by Jaafar and Nuruddin (2012) has identified how the procurement methods has evolved from the traditional procurement methods inherited from post-British colonial era to the fast track nature of Design and Build (D&B) procurements in response to the high growth of the industry in the early 1990s. The recession period circa 1997-1998 to current era has seen the industry regaining its strength, with the efforts shown by Construction Industry Master Plan (2006-2015) to reform the industry towards global excellence, innovativeness and knowledgeable solution provider. The reformation of the industry has been evident through the introduction of partnering methods in 2006 to solve the many issues with the construction industry at present. The sub-sections that follow will discuss the three distinct methods of procurement applied in the Malaysian construction industry.

3.3.1 TRADITIONAL PROJECT PROCUREMENT

The construction industry in Malaysia, a fast developing country in South-East Asia has long suffered from the problems of delays in project completion. In 2005, about 17.3% of government contract projects in Malaysia were considered sick (more than 3 months of delay

or abandoned) (Sambasivan and Yau, 2007). This could be attributed to the use of traditional project procurement methods in most government contract projects as discovered by Jatarona (2007). In the same study which one of the objectives is to investigate problems with traditional procurement system in Malaysia, Jatarona (2007) have also identified 7 critical problems related to traditional project delivery practices;

- Issues in process stages (Design development stage and documentation stage)
- Tendering and construction stages has significantly longer duration than other non-traditional procurement methods
- Construction stage could not commence without the completion of design stage
- Severe criticism and dispute occur in slow economic growth when projects are delayed
- Time consuming aspects of the traditional procurement process contribute to the need for extension of time (EOT)
- Variations of work often led to unnecessary increase in final cost of construction
- Changes are allowed to initially agreed scope of work during the course of construction process
- Lowest bid though kinder to client's budget, it does not ensure quality

Other studies have also noted the decreasing popularity of the traditional procurement method in Malaysia and have identified similar negative issues regarding to its ineffectiveness in yielding projects that are completed on time, with cost efficiencies and exceptional quality. Kong and Gray (2006) found that the separation of design and construction stage in traditional procurement is seen to be more of a barrier to increased speed of development when compared to straight cost or quality issues that comes with integrated teamwork and build-ability. Likewise, their study also discovered that the adverse time effects in accommodating scope and design changes are seen to outweigh the advantages of the flexibility provided by the traditional procurement method. The issues experienced with the use of traditional procurement methods have led the industry to move towards a single point of responsibility in project delivery, in the forms of design and build procurement. The next section explores the application and issues related to design and build procurement in the Malaysian construction industry.

3.3.2 DESIGN AND BUILD PROCUREMENT METHOD

In recent years, the Malaysian construction industry has undergone a wave of change, in which projects are of higher complexity and warrants greater emphasis on management techniques and engineering skills. The traditional method was deemed to be no longer the relevant approach to suit the needs for such projects. Public Works Department (PWD) has started introducing the Design and Build approach as a response to this situation. Ng and Yusof (2006) noted how generally Design and Build procurements are structured in one of two ways;

- The clients employ a dedicated Design and Build organization with its own in house design team.
- The clients engage a general building contractor who employs external design consultant members of the contractor's team for the duration of the project.

It should also be noted that like other procurement methods, this approach also has some significant risks to be considered. A study conducted by Adnan et al (2008) has acknowledged that the risks associated with Design and Build procurement method in Malaysia are; *time overrun*, *cost overrun*, *delay caused by the owner or the government*, *overlapping of roles, difficulty in adhering/following instructions, lack in employer brief, conflict of interest* and *variation to changes in design criteria*. Therefore, to achieve the full benefits of Design and Build, the construction practitioners involved will need to mitigate these risks effectively in a timely manner.

The single point responsibility approach indicates that it is imperative for the Design and Build contractor to possess excellent leadership skills. In a Design and Build project, the contractor is the main authority in the design and construction process, acting in the interest of the client. Jatarona (2007) identified that besides experience, the leadership of the contractor is another important factor in determining the performance of the designers within a Design and Build project. However, this will place the contractor in a pivotal role, in some cases where misused, may cause tension among the parties involved further contributing to adverse relationships. It is under this premise the relational contracting methods are introduced to cure the negativity that may arise from the interaction of various parties involved within a construction project. The industry has now realize the existence of adverse

relationships and opportunistic behaviour; thus now moving towards relationship-based approach to procurement and mutual trust working environment (Yong and Mustaffa, 2012). The next section shall discuss extensively the efforts taken by the major stakeholders in the Malaysian construction industry to implement relationship-based approach to procurement in the industry, in the form of construction partnering.

3.3.3 THE IMPLEMENTATION OF PARTNERING IN MALAYSIA

Partnering has been cited as a method to avoid unpleasant relationships with another firm, and has been identified to remedy the negative attitude of construction participants from confrontational to cooperative (Bayliss et. al., 2004; Nystrom, 2008; Yeung et. al., 2007). The construction industry in Malaysia also suffers from the adverse relationships among the parties involved due to the fact that often, each of the construction process is executed by different parties. With the execution of mega projects in Malaysia, the government has encouraged the implementation of Public Private Partnerships (PPP) in these projects, which also imposes an urgent need for a relationship-based approach in procurement in substitution to the traditional method (CIDB Malaysia, 2009). However, partnering is still in its infancy in the Malaysian construction industry, and the industry stakeholders should make full use of this opportunity to ensure that partnering is implemented the best possible way, as well as taking in consideration the risks and other issues which may come associated with the implementation of partnering.

A study conducted by Ali et al (2010) on the performance of partnering projects in Malaysia has revealed that although the partnering practice is new to Malaysia and has not been widely practiced, the performance of these pioneer projects were satisfactory. Therefore, to ensure continuous improvement and development of the partnering concept and to enable all parties involved to benefit from the concept, the Malaysian stakeholders must ensure that construction partnering projects are carefully planned, monitored and implemented. Among other issues pertaining to the implementation of PPP in Malaysia is the understanding of risks undertaken by the parties involved. According to Jusoff and Adnan (2008) most critical risks in Malaysian partnering exist in the financial aspects of partnering, government policies, economic conditions and project relationships. It is crucial that these risks are understood clearly by all parties involved in the partnering venture to ensure smooth application of partnering concepts.

More recently, Sulaiman (2011) studied the institutionalization of partnering in project management for the successful project delivery in the Malaysian construction industry. The case study reveals that the practitioners could not relate the objective for partnering implementation as instructed by the Public Works Department (PWD). The partnering concept also was not implemented throughout the entire lifecycle of the project, contrary to the partnering charter signed at the onset of the project. To some extent, the partnering concept did solve issues with regards to meeting the end user requirement of the project, and improve relationships, but the significant outcome noted by the participants in the case study was the delay in completion of project. Sulaiman (2011) has concluded the partnering concept did not work in the project and the partners involved failed to meet their mission as agreed. The weaknesses from the application of partnering for the case study are shown in Table 3.1 below.

Table 3.1: Weaknesses and specific problems in the application of partnering (Sulaiman, 2011)

Type of weakness	Specific problems
Human factor	Attitude of partners, lack of communication and problem solving skills, cooperation issues among partners, lack of understanding for the concept and knowledge of partnering.
Partnering tools	Failure in effective application of partnering tools recommended by the PWD such as; • Performance objectives evaluation system • Project performance record • The Six-Step Problem Solving Method • Issues Escalation Proforma
Overall process of partnering	Insufficient number of partnering champion meetings conducted (misinterpreting the 'if necessary' clause in the partnering contract), lack of follow-up (intermediate) partnering workshop, minimal efforts to maintain the partnering spirit throughout the project life-cycle.

The issue of the human factor is not an entirely new issue in implementing partnering in Malaysia. A previous study by Chuah (2003) noted how personal attitudes become a barrier in executing partnering practices. Partnering requires an adjustment in thinking and delivery of projects. Based on the findings, Chuah (2003) also had asserted that the construction industry is in such a fragmented state due to the traditional construction delivery system, and the practitioner's unwillingness to accept changes, which results in the long time taken to develop the appropriate culture within the industry for implementing partnering with success. In order for benefits of partnering to be fully realized, including the increased innovativeness and improved relationships in the industry, traditional processes and attitudes will have to be

replaced with a new culture focusing on the primary objectives and the significance of the project to clients.

The findings of Chuah (2003) and Sulaiman (2011) have both implied the importance of culture in fostering positive attitudes more suited for partnering success in Malaysian construction industry. Therefore it is imperative to determine what supports are available for practitioners within the industry to guide them towards the implementation of partnering. The next section will elaborate on support by the government on partnering in the Malaysian construction industry.

3.4 SUPPORTS FOR PARTNERING IN MALAYSIAN CONSTRUCTION INDUSTRY

The Malaysian 10-year Construction Industry Master Plan (CIMP 2006 to 2015) has also identified and recommended partnering as an approach to integrate the construction industry supply chain, improve client-customer relationship and enhance levels of productivity and quality of construction project implementation. This recommendation has shown to be supported by the Malaysian government with the announcement of 9th Malaysian Plan by the previous Malaysian Prime Minister, Datuk Seri Abdullah Ahmad Badawi. It was unveiled that a substantial amount of RM15 billion was allocated for construction projects open to tender (9MP, 2006). The Prime Minister also added that he will give preference to proposals that are structured as private finance initiatives (PFI), as reported by Koh Lay Chin (2006). This announcement has reflected the government's initiative to implement partnering in construction projects, seeing that PFI is a subset of PPP as understood in Malaysia (Rusmani, 2010).

The PFI approach was introduced in Malaysia by the government as an alternative method of procurement for the public sector in relation to the development and maintenance of infrastructure and facilities. This method is geared at utilizing the innovativeness and efficiency in private sector management within public projects. Through PFI methods, the government is taking initial steps in ensuring efficient management of its assets based on value for money approach towards the government spending. Therefore, in 2009 the Public Private Partnership Unit (3PU) was established as a body to provide guidance and support for

all partnering efforts in Malaysian construction industry. Among the roles of 3PU is to create awareness and provide knowledge about partnering to the industry, as well as monitoring the partnering efforts. Table 3.2 in the following page depicts the difference between conventional, PPP and privatization, as found in PPP guideline, released by 3PU which can be accessed via their website.

Table 3.2: Differences between conventional, PPP and privatization methods of procurement (Source: PPP Guideline, 2009)

Conventional	PPP	Privatization
Funding via direct public budget	Funding via private financial resources without public sector's explicit guarantee	Funding via private financial resources without implicit or explicit public sector guarantee
Immediate impact on public sector financial position	Impact on public budget spreads over the duration of the concession	No impact on the level of public sector expenditure
Risks are entirely borne by public sector	Risks are allocated to parties which can manage them most efficiently	Risks are entirely borne by the private sector
Extensive public sector involvement at all stages of project life	Public sector's involvement is through enforcement of pre-agreed KPIs	Government acts as regulator
Short term relationship with private contractors	Long term relationship with private contractors	Long term relationship with private contractors
Applicable for projects with high socio-economic returns and those justified on strategic considerations	Applicable for projects with commercial viability	Applicable for projects with high commercial viability

The role of 3PU in dispersing information among the players in the construction industry is critical if to ensure that the entire industry is aware of partnering methods, so that once it is fully implemented the entire industry, regardless of large enterprises or SMEs, will be able to reap its benefits. If partnering is said to be the antidote to the many diseases in the construction industry, its knowledge should be made available and known to every single entity in the industry. SMEs will be able to survive in the industry, through partnering efforts with much experienced large corporations and support from 3PU. Therefore, the researcher feels that there is a need to identify the level of awareness for partnering among SMEs, as they are the majority in the Malaysian construction industry, so their opinions and view regarding partnering matters to the industry. If all of the SMEs totally understand and adopt the partnering practices promoted by 3PU, the unit is successful in achieving their goal. If data collected in this research says otherwise, the feedback given by the SMEs would be valuable in improving the functions and processes currently in use by 3PU.

While CIDB Malaysia bases its partnering model on Bennett and Jayes (1998) Seven Pillars of Partnering, 3PU has also included a generic model of PPP as reference for Malaysian construction firms. The model indicates the role of clients, the role of Special Purpose Vehicle (SPV) and financing for PPP projects. In terms of financing, the model has included the possible financing options for PPP projects such as creditors, construction investors, facility management investors and other investors. This model is developed to ensure the commitment from those involved, and also for ensuring better control, management and supervision of projects. The Malaysia PPP model is shown in Figure 3.1 below.

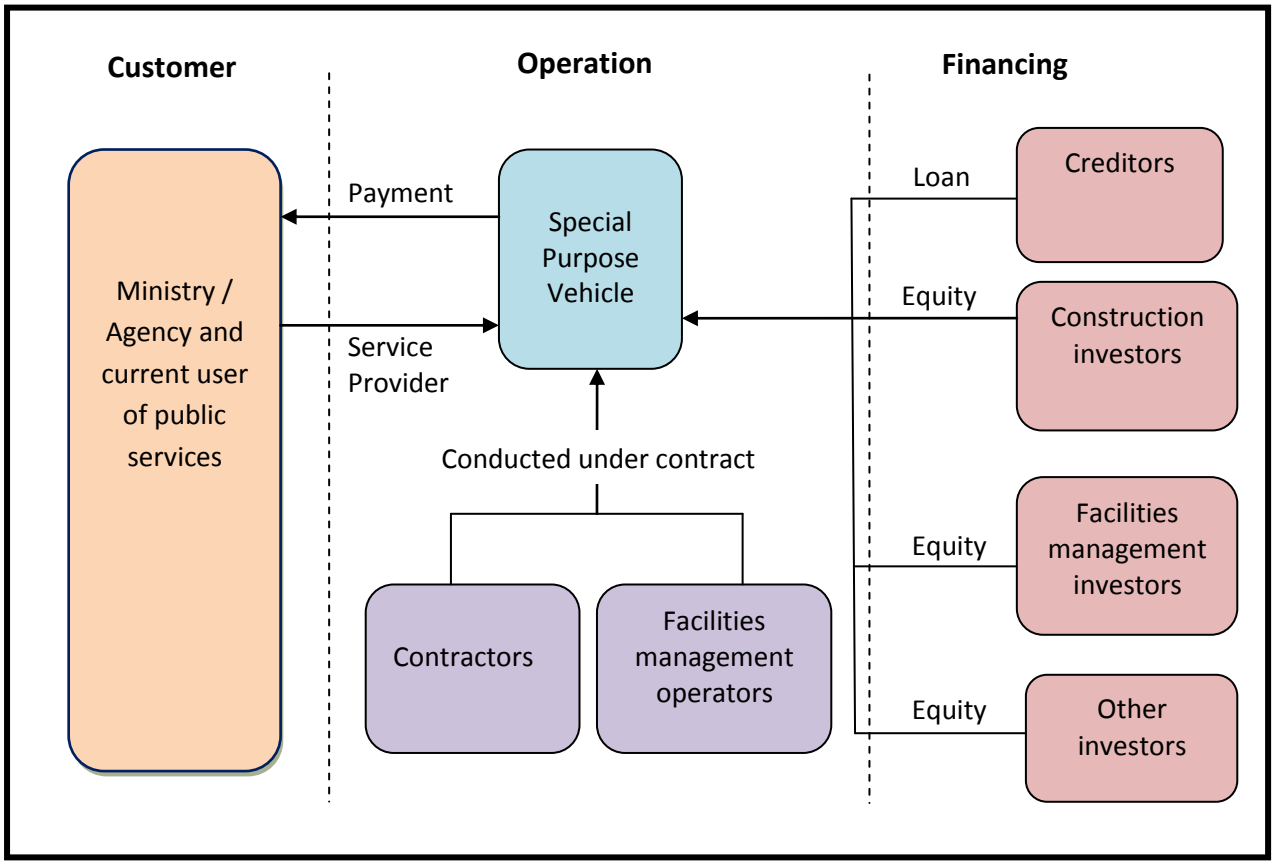


Figure 3.1: The Malaysian PPP Model as shown in 3PU guideline for PPP (Source: PPP Guideline, 2009)

With such a model and guidance present in Malaysian construction industry, it would be interesting to know if the industry is aware of partnering and adapting towards it three years after the 3PU was established. This will indicate the effectiveness of the 3PU and what other peripherals are needed to ensure that this agency can carry out its role as partnering expert, and whether there are other factors unique to the Malaysian construction industry that should be taken into consideration in the PPP model. Findings from this research can help determine the effectiveness of information is being relayed to the players in the construction industry.

However, it should be noted that the PPP model views partnering from a generic point of view for the operational aspect of partnering, rather than targeting specific areas within the partnering relationship to improve the chance of partnering success. Therefore, the findings from this research in the form of a framework for aligning organizational cultures among partnering firms will provide a significant contribution to knowledge in general, and assist the construction authorities in their efforts to promote partnering in the Malaysian construction industry.

As noted in Chapter 2, partnering is also advocated to be the solution for the many problems in the construction industry (Egan, 1998; Garnett et al, 1998; CIDB, 2009). These problems and challenges are the by-products of recent developments within global economies as previously mentioned in this chapter. The Malaysian construction industry is not isolated by these challenges which are hampering the productivity of the industry. The next section entails the current challenges faced by the construction industry in Malaysia, which can be resolved with the aid of partnering.

3.5 CURRENT CHALLENGES IN MALAYSIAN CONSTRUCTION INDUSTRY

Higher living standards and increase in Malaysian GDP has seen the construction industry contributing to increasing number of developments, coupled with the government support in encouraging foreign joint ventures in mega construction projects throughout the country at the moment. Projects such the Mass Rapid Transit (MRT) circle line project, Electrified Double Track Project (EDTP) Johor Bahru-Gemas and High Speed Railway (HSR) are some of the many mega projects being implemented which signify the rapid development of this country (CIDB, 2012).The general perception on the Malaysian construction industry as a whole is underachieving. It has low profitability and does not invest enough in training, research and development (Yong, 2012). Nevertheless, Yee and Mustaffa (2012) had concurred that although limited trust, little cooperation, poor communication and adversarial relationships are mentioned among the key problems experienced in the Malaysian construction industry; most of these findings are based on anecdotal evidence and hearsay without any concrete empirical support from established research methodology.

Accordingly, to provide a more accurate picture of the problems in the Malaysian industry at present, this research has reviewed current literature pertaining to the industry. The review of

current literature has revealed that the use of information technology (IT) among construction firms (Kareem and Abu Bakar, 2011; Jaafar et al, 2007), the saturation of contractors within the industry (Bahaman, 2012) and human resources and manpower issues (Ali et al, 2010; Ponnusamy et al, 2011; Yong and Mustaffa, 2012) are among the critical challenges within the Malaysia construction industry at the moment. These problems will be discussed in detail below.

The use of IT in the construction industry for enabling timely communication and information sharing will benefit efforts taken to implement partnering which requires efficiency in both areas (Fischer and Kunz, 2004; Stewart et al, 2002). Therefore, the use of IT in among firms should be one of the main priorities of the stakeholders in allocating efforts to improve the productivity of Malaysian construction industry. Kareem and Abu Bakar (2011) had identified that although the Malaysian construction companies realize the use of IT for improving their management process, they are somewhat unsure about IT assisting with work flexibility in construction projects and IT being a profitable investment for increasing profits and reducing cost. It should be mentioned that although the Malaysian construction companies were not fully utilizing IT in their activities, the Malaysian construction industry does not lag behind other industries in achieving comparable rates of IT implementation (Jaafar et al, 2007). At present, the Malaysian construction industry is facing different types of clients who constantly demands fast decisions, complex projects and proper management and control. Therefore it is imperative all parties involved in the construction industry realize the importance of IT in their daily business transactions to enhance their client's satisfaction.

High saturation of contractors in the Malaysian construction industry has also created a problem that calls for solution. There are a high percentage of contractors but only about 12% are actually running construction business (Bahaman, 2011). The first quarter of 2012 witnessed a total of 66,210 contractors registered under the 7 CIDB classifications in Malaysia (CIDB, 2012); a significant increase in number compared to 63,875 contractors registered just a year ago during the first quarter of 2011. With the high saturation of contractors in a SME-dominated industry (Kamal and Flanagan, 2012), there is an urgent need to limit the number of contractors in order to produce quality delivery and to ensure the sustainability of businesses within the construction industry especially when these contractors are operating in smaller and less return rural construction projects (Yong, 2012). Apart from that there should a review in current licensing process to raise the mandatory requirements for

registration and pre-qualification of contractors to ensure quality delivery from capable and committed contractors can be achieved.

The Malaysian construction industry is also facing critical issues regarding manpower and human resources. According to Sambasivan and Yau (2007), most of the unskilled labourers used in the Malaysian construction industry are foreign labourers. However in recent years, the cost of hiring foreign labourers has increased which led to labour shortages within the industry in situations where construction firms are trying to keep operating costs at minimum. Ali et al (2010) has identified that labour shortages contribute to delays in completing construction projects in Malaysia. Another challenge in regards to human resources in Malaysian construction industry is the dependence on foreign construction professional for more advance methods, designs and decision making in construction projects. This is noted by Ponnusamy et al (2011) where local construction professionals feel that they are not given the priority in decision making for construction projects. This could be due to the lack of confidence of the industry in the competence of the local professionals. Therefore the local professional should be encouraged to improve themselves in terms of competence, commitment and communication in order to ensure the successful implementation of construction projects in Malaysia, as identified by Yong and Mustaffa (2012).

Although all of these challenges are equally as critical as one to another, the implementation of PPP will serve as a solution as the partnering aspect inherent in PPP practices. Partnering will improve the coordination and communication among the team members, enable the sharing of resources and manpower through team synergies which allows transfer of skill and knowledge among firms involved, and create opportunities for businesses through industry sustainability created by third level partnering, as described in Section 2.6. Therefore, the greatest challenge to the Malaysian construction industry at present is the implementation of partnering so that its benefits can be fully utilized. Nevertheless, a fact must be considered remains that Malaysia is a multicultural country which is made up of various ethnicities and racial background. In view of strategic approaches for partnering, previous chapter has shown that there is no evidence to indicate how partnering can be implemented in a multicultural developing country such as Malaysia, let alone taking into consideration of the various organizational culture which may exists in firms involved in a partnering venture. Therefore, the following sections shall explore the cultural antecedents for Malaysia, the concept of organizational culture and its method of assessment based on previous theories.

3.6 THE MALAYSIAN CULTURE

The Malaysian culture has always been defined in terms of ethnicity and religious plurality (Mahmud et al, 2010, Ibrahim et al, 2011 and Schermerhorn, 1994). It is predominantly influenced by the Asian culture and the Islamic religion. The population is made of 3 major ethnic groups namely the Malays (50.3%), Chinese (23.8%), non-Malay indigenous people (11.0%) and Indians (7.1%). The Malays and non-Malay indigenous people together make up the Bumiputera group, though they are made up of heterogeneous groups. The Bumiputera culture lies at the core of the Malaysian identity while other ethnic cultures are recognized too (Ibrahim et al, 2011). Hence, while the official language in Malaysia is the Malay Language (Bahasa Melayu), other languages such as English, Chinese, Tamil and Punjabi are also spoken. 60% of the population practices the official religion in Malaysia, which is Islam; whilst the rest of the population practices Christianity, Buddhism, Hinduism and other religions freely. Some observable values include shyness, limited expression of feelings, respect for others, religious orientation and a collectivistic lifestyle (Mahmud et al, 2010 and Schermerhorn, 2004).

Although Malaysia is multi-racial, multi-ethnic, each ethnic group has been able to retain its own fundamental beliefs and tradition. Schermerhorn (1994) has reported that this is due to the fact that Malaysians, regardless of ethnic group, generally like to work with people who are easy to relate to and understand their culture, traditions and sensitivities. Malaysians want to progress like any other society but they want to do it on their own terms. Their culture is so deeply rooted, their rituals are part of their daily lives, and most Malaysians will give their best to those who will make them grow and allow them to retain their basic core values. Due to this, it is not out of ordinary that one will find that each ethnic group will carry some of its own cultural values into the workplace, which will contribute to the uniqueness of organizational cultures which are typically Malaysian in nature.

The next section will discuss the different types of organizational culture across different industries in Malaysia.

3.7 ORGANIZATIONAL CULTURE ACROSS DIFFERENT INDUSTRIES IN MALAYSIA

Organizational culture is developed through the daily activities, interaction within the organization and the nature of the industry in which the organization operates in. Organizational culture builds upon strong values and rituals which are reversed by the members of the organization and are a part of a conscious choice.

Ramachandran et al (2011) conducted a study to compare organizational cultures among private and public higher education institutions (HEI) in Malaysia. The organizational culture of these higher education institutions were assessed according to the CVF framework for organizational culture typology. Within the higher education industry, results indicate that there is a difference of culture types between the public and private HEIs. The public HEIs exhibits a more pronounced cultural setting compared to the private HEIs. The Clan culture and Hierarchy is considered as the most dominant organizational culture type in public HEIs, contrasting with the findings in private HEIs, where market and hierarchical cultures are considered to be the more prevalent organizational culture types. It can be deducted from these findings, that in general the Malaysian academic industry specifically in the case of HEIs, are governed by the Hierarchy culture which has traditional approach to structure and control, respect for position and power, often has well-defined policies, processes and procedures within their organization.

On the other hand, the Market culture has been identified as the dominant organizational culture within the Malaysian manufacturing industry in a research conducted by Sambasivan and Ching (2010). Although the Market culture is similar to Hierarchy culture in terms of control, but Market culture organizations will seek control with an outward focus to fulfil the needs of the market and clients, are driven by results and often very competitive. Sambasivan and Ching (2010) also pointed out the importance of aligning the organizational culture within the manufacturing supply chain to ensure a higher degree of integration among alliances or partner firms. Degree of integration has a direct positive effect with value creation, which implies that with the appropriate organizational culture, partnering relationships has a higher chance of success and will achieve mutual benefits for all parties involved.

Previously, another study by Wang and Abdul Rahman (2010) was conducted to identify the current enterprise culture, leadership styles and enterprise axiology in Malaysian construction

contracting firms. This study has identified that the dominant organizational culture among Malaysian contractors is the 'Monkey' culture which epitomized teamwork and loyalty. The 'Monkey' culture was described by Jacobs (2002) as being similar to 'Clan' culture according to Cameron and Quinn (1999) model. The finding has added to the motivation for this research to focus on the insights of the private SME consultant engineering firms in order to extend the current knowledge in terms of profiling the organizational culture within the Malaysian construction industry.

The CVF has also been used to identify whether there is a different culture that applies to different activities within organizations. Suppiah and Sandhu (2011) has conducted a study to determine the organizational culture for knowledge sharing within organizations from various industries in Malaysia. These various backgrounds include organizations from agricultural, financial, information technology and health care industries. It was identified that the Clan culture assist in knowledge sharing efforts, as opposed to Hierarchy culture is detrimental in knowledge sharing. This indicates the importance of organizational culture to encourage specific activities within organizations, and contributes to the success of the activities. In relation to activities with partnering organizations, Sambasivan and Ching (2010) has identified that organizational culture has strong impact on the degree of the integration among alliances which in turn will positively affect value creation. These findings agree with the understanding of this research, in which organizational culture has a crucial role in partnering success, as also noted by Chuah (2003) and Sulaiman (2011).

3.8 THE CONCEPT OF ORGANIZATIONAL CULTURE

Organizational culture can be displayed in the ways the firm conducts its business, treats its employees, customers and the society; the extent to which autonomy and freedom is allowed in decision making, developing new ideas and personal expressions; the flow of power in information throughout its structure, and how committed the employees are towards collective objectives of the firm. In this thesis, organizational culture can be defined as ***a complex set of values, beliefs, assumptions and symbols that define the way in which a firm conducts its business*** (Deal and Kennedy, 1982; Peters and Waterman, 1982; Omatola and Oladipupo, 2011). This definition inspires the researcher as it is the most relevant definition for the context of this research, and it simply describes the concept of culture for a firm working in a business environment. Inspired by the same definition, Louis (1983) proposes

culture has inescapable effects on a firm because a firm's culture not only defines who its relevant employees, customers, supplies and competitors are, but it also defines how a firm will interact with these key actors. Schein (1986) made the connection between organizational culture and leadership by highlighting that organizational culture serves the leader of an organization through nurturing the value system created by the leader to both serving and incoming members.

Though there are many ways in which organizational culture can be defined, the literature seemed to be in agreement that organizational culture is crucial to the firm's success, and is one of the most difficult things to change within a firm (Omatola and Oladipupo, 2011). Peters and Waterman (1982) suggested that organizational culture is important to achieve organizational effectiveness. Furthermore Schein (1986) has noted that there may be several cultures operating within an organization; managerial culture that is occupationally based, group culture which is derived from geographical proximity, and worker culture that is based on shared hierarchical experiences. Although the literature agree that the components of culture as a broad construct, there are some areas within the knowledge of organizational culture in which there are varying opinions such as; what constitutes the organizational culture, whether it is possible to adequately describe an organizational culture, whether the culture can be effectively managed, and if so which management strategies are most likely to succeed (Robbins, 1987). Therefore, it is imperative that leaders of organization understood the components of organizational culture, to aid them in strategizing the best methods in their business activities. The need for understanding organizational culture is even greater when the organization is involved in a partnering relationship as they would have to deal with other organizations, which was duly highlighted previously in Chapter 2.

In understanding the broad construct of organizational culture, it is important that the determinants of organizational culture are discussed within this section. According to Johnson (1988), there are a number of elements accountable for influencing the organizational culture in a firm. These elements are grouped in a framework identified as the Cultural Web. It consists of seven basic elements in an organization, namely the paradigm, control systems, organizational structures, power structures, symbols, rituals and routines, finally stories and myths, as shown in the following Figure 3.2.

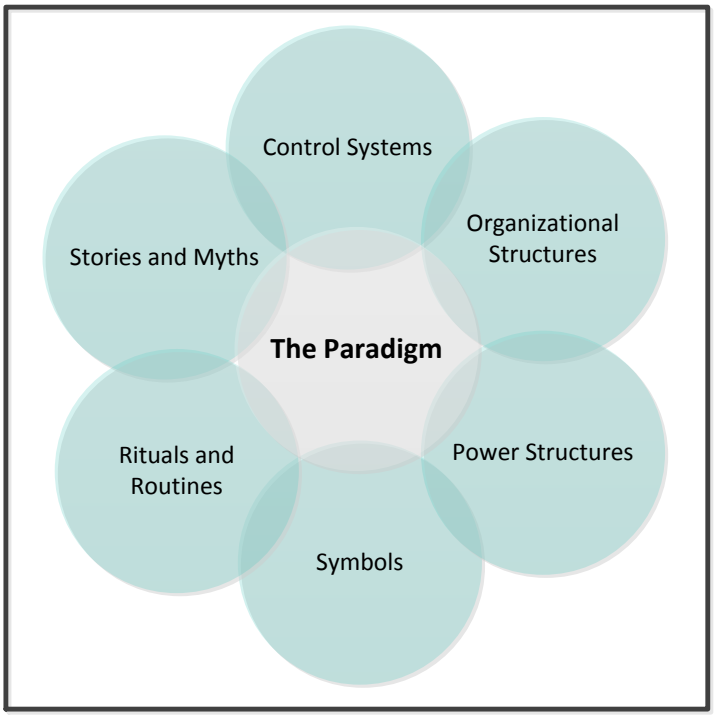


Figure 3.2: Cultural Web (Johnson, 1988)

In the cultural web model, each of the adjoining elements signifies a component of an organizational culture. Control systems address the processes which are in place to monitor what is going on. The reporting lines, hierarchies and the way that work flows through the organization, are reflected in the organizational structures. Power structures in the cultural web focus on who makes the decisions, how widely spread is the power held, and on what reasons that power is based. Symbols not only just include the organizational logos and designs, but also extend to the symbols of power, such as parking spaces and executive washrooms. Rituals and routines of an organization includes management meetings, board reports, monthly activities which may sometimes become habitual than necessary. The final element in the cultural web, stories and myth, are best described by the build-up about people and events in the organization and more often they convey a message about what is valued within the organization.

The paradigm in the cultural web refers to basic reasons of existence for the organization specifically what is it about, what it does and the missions and values unique to the organization. The level in which each element is affected within an organization shapes the type of organizational culture present within the organization. This model has provided the

researcher with the understanding of what are the basic components of organizational culture, and indicates how organizational culture can be observed within an organization.

The following discussion progresses to highlight the many methods for assessment of organizational culture present in current literatures.

3.9 ASSESSMENT OF ORGANIZATIONAL CULTURE

Throughout the years, there have been previous studies that have classified types of organizational culture which exists in an organization. Although generally all of these studies named several types of organizational culture, these studies were conducted with different focus on the organizational attributes. Profiling and assessment of organizational culture has become a critical area of research, and has been the challenge being faced by organizational scholars and researchers. Omatola and Oladipupo (2011) have adequately mentioned the importance of measuring and diagnosing the culture of an organization is born out of the fact that the suitability of the culture is critical to the success of an organization. Organizational culture is one of the determinants of organizational effectiveness and organizational members' satisfaction (Schein,1989; Omatola and Oladipupo, 2011). It is difficult to name a single successful organization which is an industry leader that does not have a distinctive, readily identifiable organizational culture. However, most organization are unaware of their culture until it is challenged, until a new culture is experienced or until the culture is made explicit through a framework or model (Cameron, 2004). The subsections that follow describe several methods for assessing organizational culture, as found from the literature review.

This section shall explore these models and frameworks that describe the typologies of organizational culture.

3.9.1 HOFSTEDE'S FRAMEWORK OF ORGANIZATIONAL CULTURE (HOFSTEDE ET AL, 1990)

Hofstede (1980) had originally identified that there are national and regional cultural groupings that affect the behaviour of organizations. In his study of national influences for individuals working in various IBM offices globally, 4 dimensions of cultural differences have been acknowledged. These dimensions include: ***individualism vs. collectivism***, ***power distance***, ***uncertainty avoidance***, and ***masculinity vs. femininity***. Over the years, Hoftsede (2011) further acknowledgement and collaborations with other researchers have resulted in the identification of the fifth dimension, ***long-term vs. short-term*** (Hofstede and Bond, 1988) and the sixth dimension, ***indulgence vs. restraint*** (Hofstede et. al., 2010), which has further expanded the cultural differences framework (Hofstede, 2011). These dimensions are described in detail in Table 3.3below:

Table 3.3: Framework of Cultural Differences (Hofstede, 2010)

Dimension	Description
Individualism vs. collectivism	The degree to which people are expected to stand for themselves, or alternatively act predominantly as a member of the organization.
Power distance	The measure of inequality between 'bosses' and inferiors to which extent that is acceptable.
Uncertainty avoidance	The extent to which a society accepts uncertainty and risks, or tries to avoid it by establishing more structure.
Masculinity vs. femininity	The measure in which a culture values such behaviour as assertiveness, achievement, acquisition of wealth or caring for others, social support and quality of life.
Long-term vs. short-term	The degree of importance placed on the future in contrast to the past and present. It describes a society's time horizon.
Indulgence vs. restraint	The degree to which the gratification need in contrast to the control of basic human desires related to enjoying life.

Hofstede et. al. (1990) had later conducted a research similar to the IBM studies but focusing on organization rather than national differences, which resulted in the six-dimensional framework specifically designed for organizational culture. It should be highlighted that the dimensions included in this subsequent model are more reflective of the traits which existed in an organizational setting. The six independent dimensions of practices are known as; ***process-oriented vs. results-oriented***, ***job-oriented vs. employee oriented***, ***professional vs. parochial***, ***open systems vs. closed systems***, ***tightly controlled vs. loosely controlled***and

finally,***pragmatic vs. normative***. These dimensions are included in the framework for organizational culture as shown in the following Table 3.4.

Table 3.4: Framework for organizational culture (Hofstede et al, 1990)

Dimension	Description
Process-oriented vs. results-oriented	Process-oriented cultures are dominated by technical and bureaucratic routines whereas results-oriented cultures are dominated by a common concern for outcomes.
Job-oriented vs. employee-oriented	Job-oriented cultures assume responsibility for the employees ' job performance only and nothing more; while employee-oriented cultures assume a broad responsibility for their members' well-being.
Professional vs. parochial	The usually educated professional members identify primarily with their profession, while the parochial members derive their identity for which they work.
Open systems vs. closed systems	Refers to the common style of internal and external communication, and to the ease with which outsiders and newcomers are admitted.
Tight control vs. loose control	Deals with the degree of formality and punctuality within the organization.
Pragmatic vs. normative	Describes the prevailing way (flexible or rigid) of dealing with the environment in particular with customers.

Hofstede et al (1990) model views that organizational culture can be determined through identifying the manner in which the organization's members reacted in the six dimensions of organizational culture. In this model, organizations tested will display scores on these dimensions which are based partially on their nature of business and a number of other characteristics of the organization. From these scores, conclusions can be drawn to determine how the organizational cultures could be managed. Rather than generalizing the type of organizational culture, the model reflected that there could be variants in the type of culture within an organization, which agrees with Schein's (1986) proposition.

3.9.2 SCHEIN'S MODEL OF ORGANIZATIONAL CULTURE TYPOLOGY (SCHEIN, 1989)

Schein (1989) defines culture as (a) a pattern of basic assumptions, (b) invented, discovered, or developed by a given group, (c) as it learns to cope with its problems of external adaptation and internal integration, (d) that has worked well enough to be considered valid and, therefore (e) is to be taught to new members as the (f) correct way to perceive, think, and feel in relation to those problems.

The Schein Model for organizational culture typology is based on levels of organizational culture as experienced by an individual within an organization. The levels of organizational culture model as proposed by Schein (1989), is shown in the following Figure 3.3.

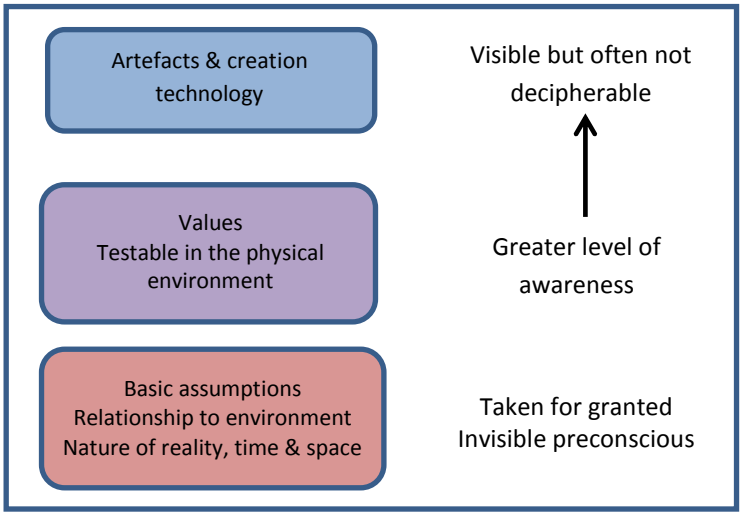


Figure 3.3: Levels of culture and their interaction (Schein, 1989)

A researcher could observe and feel the organization's ***artefacts***, which includes everything from the physical layout, the dress code, the way people address each other, and even the smell and feel of the place. Although artefacts are easily seen, the way an outsider reacts to artefacts may not be an indication of how the members of the organization react to them. Schein also noted that the second level of culture, which encompasses ***values, norms, ideologies, charters and philosophies***, can be tested through interviews, questionnaires and other survey instruments. It is also crucial for a researcher to understand what dimensions to test within a particular culture by examining the deeper levels of that culture, in order to ensure the dimensions tested are relevant and salient to the organization. The third level of culture requires deeper observations and more focused questions. For the purpose of deciphering the usually unconscious assumptions that governs the organization members' ***perceptions, thought processes, feelings and behaviour***, a researcher will need to include members of the organization in intensive self-analysis to understand the taken-for-granted assumptions, after which only then the researcher will be able to comprehend the organization's culture.

The Schein's model of organizational culture implies that although culture within an organization can be felt, understood and experienced by its members, it is however, much

harder to decipher into separate categories. Culture is seen a holistic entity in an organization, where only different levels of intensity can be experienced and seen by its members.

3.9.3 DEAL AND KENNEDY'S MODEL OF ORGANIZATIONAL CULTURE (DEAL AND KENNEDY, 1982)

This model has suggested that an organization's culture is highly affected by the business environment in which it operated. Two key dimensions are tested with this model namely; the degree of risk associated with the company's activities and the speed at which companies and their employees get feedback on whether decisions or strategies are successful (Deal and Kennedy, 1982). Each dimension is divided into high and low, resulting with four generic cultures known as; the tough guy macho culture, the work hard/play hard culture, the bet-your-company culture and the process culture. The position of each generic culture according to the corresponding dimensions tested in this model is as shown in the following Figure 3.4.

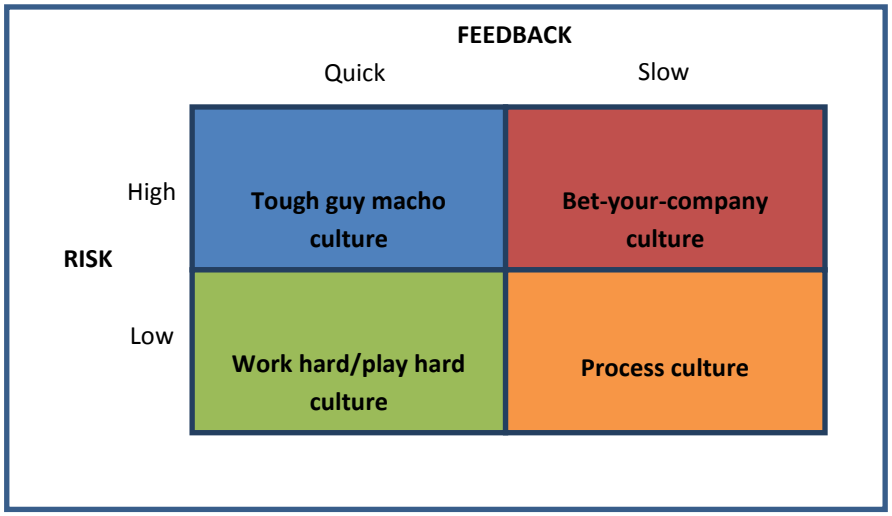


Figure 3.4: Model of Organizational Culture (Deal & Kennedy, 1982)

The ***tough guy machoculture*** essentially describes an organization which hosts individualist who regularly take high risks and get quick feedback on whether their actions were right or wrong. Managers within this culture must be able to make decisions quickly and to accept risk; are resilient in crisis. Aggressive internal competition characterized this type of culture, and is commonly present in organizations which feedback comes in the form of financial rewards.

The ***work hard/play hard culture*** are similar the tough guy macho culture in providing quick feedback, however place more importance on fun and action in general. This type of culture is characterized by high levels of activity and employees take on minimal risks. Success in these organizations is measured by persistence. Managers working within this culture must always ensure that the high levels of energy are being directed at the right tasks, and quality is maintained throughout the high levels of activity.

The ***bet-your-company culture*** is characterized with big-stakes decisions, and the long duration taken before the employees will be able to know whether their decisions have paid off. It is common for organizations involved in mega projects over a certain amount of time with large amounts of resources to exhibit this culture. Due to its long duration and large amount of resources, each of these projects is very risky in nature, and the organization does everything in its power to ensure things are done correctly each time. Meetings are typically essential in this culture, and experts are included in these meetings to give their opinions.

The ***process culture*** is fundamentally what laymen would call bureaucracy. In this culture, the low-risk, slow feedback environment means that employees become more concerned with how work is done (the process) rather than with what the work is. The employees can easily be defensive, in fear of punishment if things are done incorrectly.

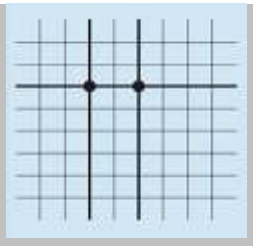
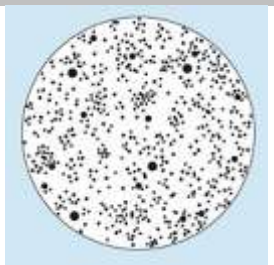
This model implies that within an organization, the manner in which the organization responses to stimulation from the business environment shapes the overall culture of the organization. However, problems may arise should the organization demonstrates inappropriate culture to survive within the industry it operates in. Therefore, the identification of the type of organizational culture should then always be aligned with the needs of the industry.

3.9.4 HANDY'S MODEL OF ORGANIZATIONAL CULTURE (HANDY, 1985)

Handy proposes a simple model for categorizing cultures into four organizational cultures; power culture, role culture, task culture and person culture. This model describes the different organizational cultures present by relating the culture to an organizational structure, making the task of identifying an organization's culture easier to comprehend than other approaches.

The points made by Handy were not only that describing something as abstract as culture without a specific diagram is a complicated task, but also reinforces the fact that organizational culture and organizational structure are interrelated. Omatola and Oladipupo (2011) have noted that Handy's framework is used by many scholars to link organizational structure to organizational culture. This framework is described in detail in the following Table 3.5.

Table 3.5: Charles Handy Model of Organizational Culture

Type of culture	Culture illustration	Description
Power culture		Power culture can be illustrated by a spider web, because the key of the organization sits in the centre, surrounded by circles of intimates and influence. Control emanates from the centre of the web, and there is little bureaucracy and rules in place. Organizations that depicted power culture may respond quickly to events, but decision making will be made by those closer to the centre of the web. This type of culture is usually present in small entrepreneurial organizations and political groups, but will often disband as the organization grows.
Role culture		The main theme of role culture is individuals have clearly delegated authorities within a highly defined structure. It is illustrated as a building supported by columns and beams, each column and beam as important as the next. In this culture, individuals are the role occupants, and the role continues even if the individual leaves. Rules and procedures are of high importance in this culture. Role culture is usually present in the public sectors bodies.
Task culture		The task culture is depicted as a net, with some of the strands thicker than others, and knots are present at the interstices of the net. These knots represent the point of power and influence within the organization. This culture relies on the unifying power of the group to improve efficiency and to help the individual identify with the objectives of the organization. In this culture, teams are formed to solve particular problems, and therefore this culture is often present in matrix or project-based structured organizations.
Person culture		The person culture exists in organizations where all individuals believe themselves superior to the organization. The individual is the focal point of this culture, the organization merely exists to serve and assist the individual within it to further their own interests without any overriding objective. Professional partnerships involving consultants or experts may operate as person cultures, because each of the partner brings a particular expertise and clientele to the firm.

This framework by Handy (1985) has also amplified the relationship between organizational culture and organizational structure. For example the role and task cultures in this model

reflects similarly to hierarchical and matrix structures, respectively. This also highlights how closely related organizational culture and structure is, and how the leadership in an organization influences the type of culture of an organization, which was also noted by Schein (1986).

3.9.5 TROMPENAARS AND HAMPDEN-TURNER'S FRAMEWORK (TROMPENAARS AND HAMPDEN-TURNER, 1997)

Trompenaars and Hampden-Turner (1997) classified cultures along a mix of behavioural and value patterns. They identified seven dimensions of culture by broadening the definition of national cultures from the previous work of Hofstede on cultures. The seven dimensions of culture is expressed in pairs of opposites; ***universalism vs. particularism***, ***individualism vs. communitarianism***, ***neutral vs. affective***, ***specific vs. diffuse***, ***achievement vs. ascription***, ***sequential vs. synchronous***, and finally ***internal direction vs. external direction***. These dimensions are described in detail in the following Table 3.6.

Table 3.6: Trompenaars& Hampden-Turner Framework of Cultural Dimensions

Dimensions	Description
Universalism vs. Particularism	This dimension describes how one's culture applies its principles. Universalism place emphasis on rules and regulations regardless of individual circumstances. They try to deal fairly with people based on these rules, but rules come before relationships. Particularism place more emphasis on relationships and flexibility. Their response to a situation may change, based on what's happening in the moment, and who's involved.
Individualism vs. Collectivism	Refers to a culture's focus. Individualism focus on the needs of the individual, freedom and responsibility. Within the individualism focus, decisions made are solely one's own responsibility, and each person is expected to take care of themselves. Collectivism puts forward group emphasis and consensus. Group is more important than the individual, where often help and safety is provided by the group, in exchange for loyalty.
Neutral vs. Affective	Neutral state of culture emphasizes objectivity and detachment. People don't reveal what they're thinking or how they're feeling. Contrastingly, affective emphasizes displays of emotion. In these cultures, it's welcome and accepted to show emotion
Specific vs. Diffuse	Refers to a culture's blending of work and personal life. Specific describes the total separation of work and personal life; those within this culture believe that people can work together without having a good relationship. On the other had diffuse state of culture blends the two; with the belief that good relationships are vital to meeting business objectives, and that relationships with others will be the same, whether at work or meeting socially.
Achievement vs. Ascription	These dimensions reflect the way a culture assigns status. Achievement place emphasis on performance. These cultures value performance, no matter who you are. Ascription emphasizes that status comes from age, education, gender and personal characteristics. Power, title, and position matter in these cultures, and these roles define behaviour.
Sequential vs. Synchronous	Describes how cultures view the use of time. Sequential timing places importance having events happening in order. Punctuality, planning and staying on schedule are highly regarded traits within this culture. Synchronous timing views the past, present and future as interwoven periods. Through synchronous timing, it is common to have people working on several projects at once, and view plans and commitments as flexible.
Internal direction vs. External direction	These dimensions describe how people relate to their environment within the culture. Internal direction reflects on cultures which believe they can control nature or their environment to achieve goals. External direction emphasizes on the belief that nature, or the environment controls all other things, and people have to work with their environment to achieve their goals.

This framework is particularly useful in understanding and dealing with cultural differences. It was developed based on the findings from a research which covered 15,000 people from various companies, across fifty countries (Trompenaars, 1996). However, the framework also applies within the setting of culture and organizational culture, which results in some confusion between the two. According to Darko (2010), Trompenaars had identified the seven dimensions of culture based on the solutions from three types of problems; the relationship with others, time and the environment.

Although there are similarities in two of the dimensions in this framework to the first two dimensions of the Hofstede's Model of Cultural Differences, this framework differs in which the dimensions are more behavioural in nature rather than Hofstede's dimension which

highlights the values. Therefore, it can be observed that this framework is easier to relate in comparison to its predecessor, as it describes the behavioural aspect of individuals rather than the values which is much harder to identify.

3.9.6 ORGANIZATIONAL CULTURE PROFILE (O'REILLY, CHATMAN & CALDWELL, 1991)

The Organizational Culture Profile (OCP) was first developed by O'Reilly, Chatman and Caldwell (1991). It is developed with the aim to measure person-organization fit, but has since been used by researchers as an instrument for assessing cultural traits in organizations. The OCP is further tested and developed which lead to the identification of 7 organizational culture dimensions specifically; innovation, stability, people orientation, outcome orientation, detail orientation, team orientation and aggressiveness. These dimensions are shown in figure 3.5 below.

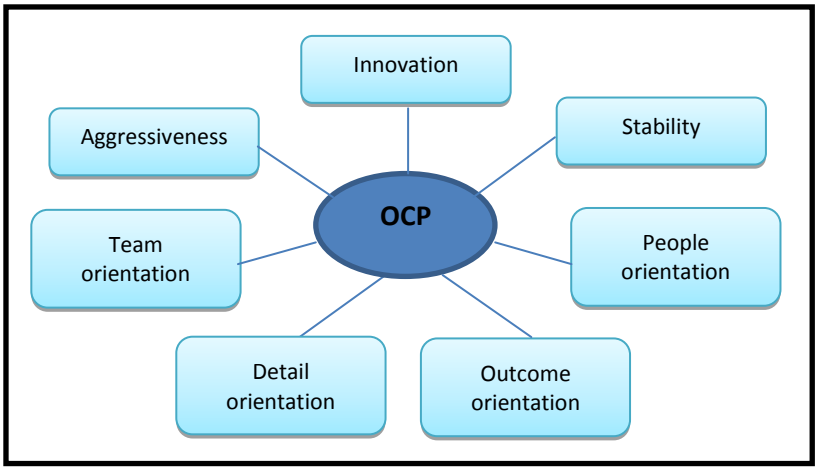


Figure 3.5: Organizational culture profile (OCP) dimensions by O'Reilly, Chapman and Caldwell (1991)

The OCP contains a set of 54 value statements that can be used to ideographically assess both the extent to which certain values characterize a target organization and an individual's preference for that particular configuration of values. It employs the Q-sort method, which involves the respondents sorting the value statements into 9 categories on a normal distribution from least to most characteristic of their organisation. This process forces the respondents place fewer items in outlying categories and more items in middle categories. The category pattern for 54 items was 2-4-6-9-12-9-6-4-2, which means for example that only 2 value statements could be identified as least characteristic. The next stage involves the respondents to repeat the process, but this time to represent their ideal organization. Person-culture fit can be calculated by correlating the profile of organizational values with the profile of the individual's preferences.

In Malaysia, there are previous studies conducted to measure the organizational culture with OCP. Among these studies; Rajiani and Aziz (2012) applied OCP to determine the organizational culture in Malaysian manufacturing firms, and earlier on Md Nor (2006) proposed to study the link between organizational culture and knowledge management aided by the use of OCP. However, the administration of the OCP can be a frustrating undertaking for participants, due to the perception that there are more 'positive' than 'negative' value statements in the instrument which could potentially lead to misinterpretation of the value statements, as noted by Fidock and Talbot (2008). Considering this constraint and the limitations in time and resources for this research, this method was not selected as the method for assessing organizational culture in this research.

3.9.7 THE COMPETING VALUES FRAMEWORK (CAMERON AND QUINN, 1999)

The competing values framework (CVF) was originally designed with the idea of determining the values that employees held as valuable in regards to organizational effectiveness (Quinn &Rohrbaugh, 1983). This framework is the base of several other frameworks regarding organizational culture, including Quinn (1988), Cameron and Freeman (1991), Deshpande, Farley and Webster (1993), Cameron and Quinn (1999) and Jacobs (2002). Essentially, the CVF framework classifies values of organizational effectiveness into four main types namely; Collaborate, Create, Compete and Control. This framework helps identify a set of guidelines that can help leaders diagnose and manage the inner workings of an organization, which are commonly intangible in an organization's daily activities.

The basic framework is built on two dimensions; one drawn vertically and the other horizontally, resulting in a two-by-two diagram with four quadrants. The first dimension of the framework distinguishes an orientation toward flexibility, discretion and dynamism from an orientation toward stability, order and control. On the other hand, the second dimension separates an orientation toward an internal focus and capability, the integration and unity of processes, from an orientation toward an external focus and opportunities, differentiation and rivalry with regards to outsiders. From the research of Quinn and Rohrbaugh (1983), Cameron and Quinn (1999) has presented a more specific model for classifying organizational culture types which labels each organizational culture as Clan, Market,

Adhocracy and Hierarchy. This model for organizational culture typology can be seen in Figure 3.6 below.

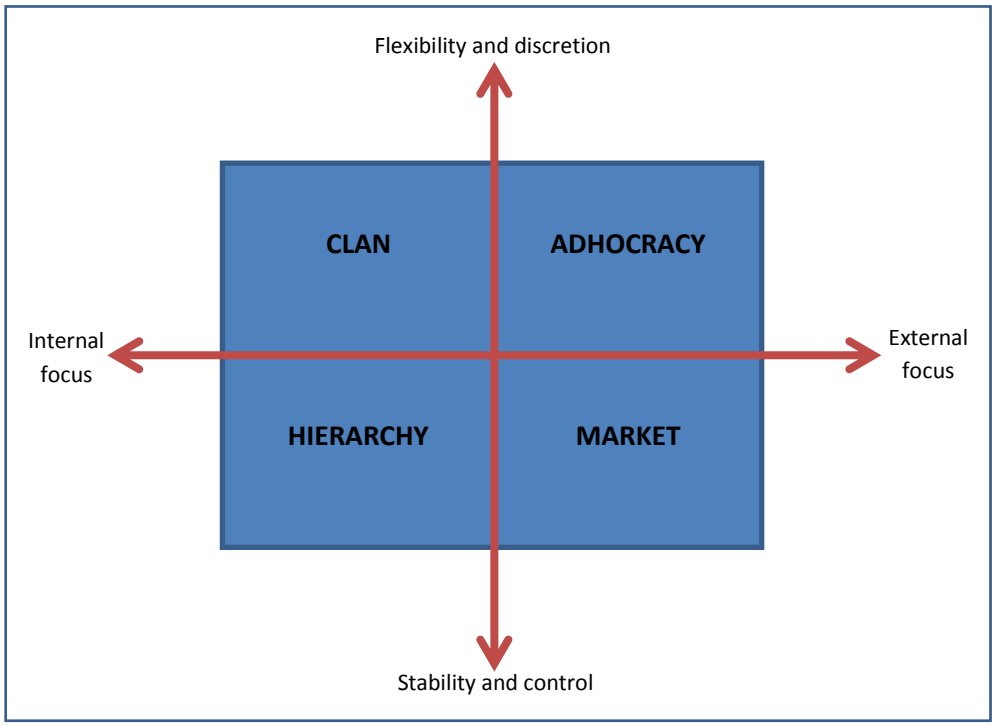


Figure 3.6: Organizational culture typology (Cameron and Quinn, 1999)

These four quadrants represent opposite or competing assumptions. Each continuum in this model highlights value creation and key performance criteria which are opposite of the respective criteria on the other end of the continuum; specifically flexibility versus stability, internal focus versus external focus. Consequently, the dimensions similarly produce quadrants that are also contradictory or competing on the diagonal. In Asian studies, the researchers describe these four cultural styles respectively as Rabbit (Adhocracy), Monkey (Clan), Elephant (Hierarchy) and Tiger (Market) (Jacobs, 2002).

Considering the versatility of this model and the number organizational culture frameworks it is based on, the CVF model of organizational culture is chosen to be applied in identifying the type of organizational culture within consultant engineering firms in this research. While there is some debate about measuring organizational culture values by only 2 or 3 dimensions, generally the evidence shows that this model can integrate the majority of organizational culture dimensions offered in the literature (Yu and Wu, 2009). The CVF has also been empirically validated in cross-cultural research, where considerable amount of

empirical research have verified the reliability and validity of the model (Howard, 1998; Ralston et al, 2006; Oney-Yazici et al, 2007; Duygulu and Ozeren, 2009).

Relating to the applicability of this model in Malaysia, the CVF has also been extensively used in significant number of research to diagnose the type of organizational culture across various industry in Malaysia (Ramachandran et al, 2011; Suppiah and Sandhu, 2011; Wang and Abdul Rahman, 2010; Sambasivan and Ching, 2010), as well as other Asian countries (Yu and Wu, 2009; Jingjit, 2008; Hongratana-uthai, 2011 and Suhardini, 2005). Based on these justifications, the researcher feels that this model is the most appropriate model for testing organizational culture in the Malaysian construction industry.

3.10 COMPARISON OF ORGANIZATIONAL CULTURE ASSESSMENT METHODS

The previous section has explored the various framework and models for assessment of organizational cultures. Each of these frameworks and models has provided this research with knowledge pertaining to the concept of organizational culture, in relation to the focus of their approach. This knowledge is beneficial specifically in understanding the tenets of organizational culture, as well as providing the researcher with ideas for strategizing towards the identification of organizational culture for firms in the construction industry in general, and private SMEs consultant firms in particular. The summary for each of frameworks and models previously discussed is as shown in the following Table 3.7.

Table 3.7: Frameworks and Models for Organizational Culture Typologies

Authors	Focus	Dimensions / Measures
Hofstede et al (1990)	Cultural groupings that affect behaviours of organizations	Process-oriented vs. results-oriented Job-oriented vs. employee-oriented Professional vs. parochial Open systems vs. closed systems Tight control vs. loose control Pragmatic vs. normative
Schein (1989)	Organizational culture type is based on the levels of organizational culture as experienced by individual within an organization.	Level 1: Artefacts Level 2: Values Level 3: Basic assumptions
Deal and Kennedy (1982)	Organizational culture is highly affected by the business environment in which it operated.	Tough guy macho culture Work hard/play hard culture Bet-your-company culture Process culture
Handy (1985)	Describes the different organizational culture by relating that culture to a particular organizational structure.	Power culture Role culture Task culture Person culture
Trompenaas& Hampden-Turner (1997)	Classification of organizational cultures along a mix of behavioural and value patterns.	Universalism vs. particularism Individualism vs. collectivism Neutral vs. affective Specific vs. diffuse Achievement vs. ascription Sequential vs. synchronous Internal direction vs. external direction
O'Reilly, Chapman & Caldwell (1991)	Developed to measure person-organization fit based on rating for experience in current organization and perceptions of ideal organization.	Innovation Stability People orientation Outcome orientation Detail orientation Team orientation Aggressiveness
Cameron & Quinn (1999)	Classification of organizational culture through the organization's characteristics within 2 dimensions; Flexibility vs. Control & Stability External focus vs. Internal focus	Clan Adhocracy Hierarchy Market

However, it should be noted that these frameworks and models are based on the general business industries, which data were obtained from empirical research on managers and administrators. There is little attempt to develop a framework for organizational culture which is applicable to the construction industry until very recently (Cheung et al, 2011), and even so, there is virtually none focusing on aligning the cultures for firms in a partnering relationship. This confirms the validity of the gap this research is highlighting and contributing in terms of expanding the knowledge.

From the discussion in the previous subsections, it was determined that the Competing Values Framework (CVF) is the most suited assessment method to be applied in this research. Prior to identifying the type of organizational culture in Malaysian construction

industry, it is important the assessment method selected can be customized to suit the characteristics of the construction industry and include industry-specific dimensions for assessment. With that in mind, this chapter shall next explore the dimensions of organizational culture in construction industry as identified by previous researchers.

3.11 ORGANIZATIONAL CULTURE DIMENSIONS IN THE CONSTRUCTION INDUSTRY

Within the construction industry itself, culture is considered to be about the characteristics of the industry, approaches to construction, competence of craftsmen and people who work in the industry and the strategies, goals and values of the organizations within which they work (Ankrah and Proverbs, 2009). A culture emerges from basic tacit assumptions about how the world operates and what a group of people share that determines their perceptions, feelings and behaviour. There are a number of factors that influence the culture within the construction industry. Gajendran and Brewer (2007) identified these factors as adversarial attitudes in contractual claims, culture in procurement, national culture, ethics and culture, cultural change, knowledge transfer, professional cultures and corporate culture. All of these factors shape the overall culture of the construction industry.

There have been attempts by previous studies (Tsui et al (2002) study as cited in Tsui et. al., 2005; Ankrah et. al., 2009; and Cheung et. al., 2011) to identify the construct of organizational culture within the construction industry. These studies have come up with their own findings for the various dimensions present within the construction industry setting. In order to fully dissect the contribution of organizational culture towards construction partnering success, the dimensions of organizational culture in the construction industry setting should be identified. This research will proceed with testing the dimensions of organizational culture in Malaysian construction industry and identify the type of culture within each dimension, to determine if these culture profiles are beneficial in aiding partnering success. The following Table 3.8 shows the dimensions of organizational culture in construction industry as found in previous studies.

Table 3.8: Past research findings on organizational culture dimension

Organizational culture dimensions	Tsui et. al. (2002)	Ankrah et. al. (2009)	Cheung et. al. (2011)
Client orientation	X	X	X
Workforce orientation	X	X	X
Leadership / management	X	X	X
Outcome / performance orientation	X	X	X
Reward orientation			X
Innovation	X		X
Teamwork		X	X

For the purpose of this research, the dimensions inspired by Cheung et al (2011) shall be explored, considering it is the recent findings hence the high probability of relevance with the current context of organizational culture within a construction industry setting.

Up to this point, the concept of organizational culture, its typologies and methods for assessment has been explored. The selection of methods for assessing organizational culture within the context of this research has also been justified. The following sections shall highlight the scope of this research, the Malaysian construction industry.

3.12 CONCEPTUAL MAPPING FOR THIS RESEARCH

Up to this section, the literature review has explored the key concepts of partnering and organizational culture critical to gain a holistic understanding for this research. These findings have informed the researcher of previous theories which will be the basis of future findings from this research. The concepts that were visited in the literature review as discussed in Chapter 2 and this chapter has enabled the researcher to isolate the concepts which are imperative to be studied in order to achieve the aim of this research. The following Figure 3.7 portrays the conceptual mapping for this research and highlighting the main focus of this research.

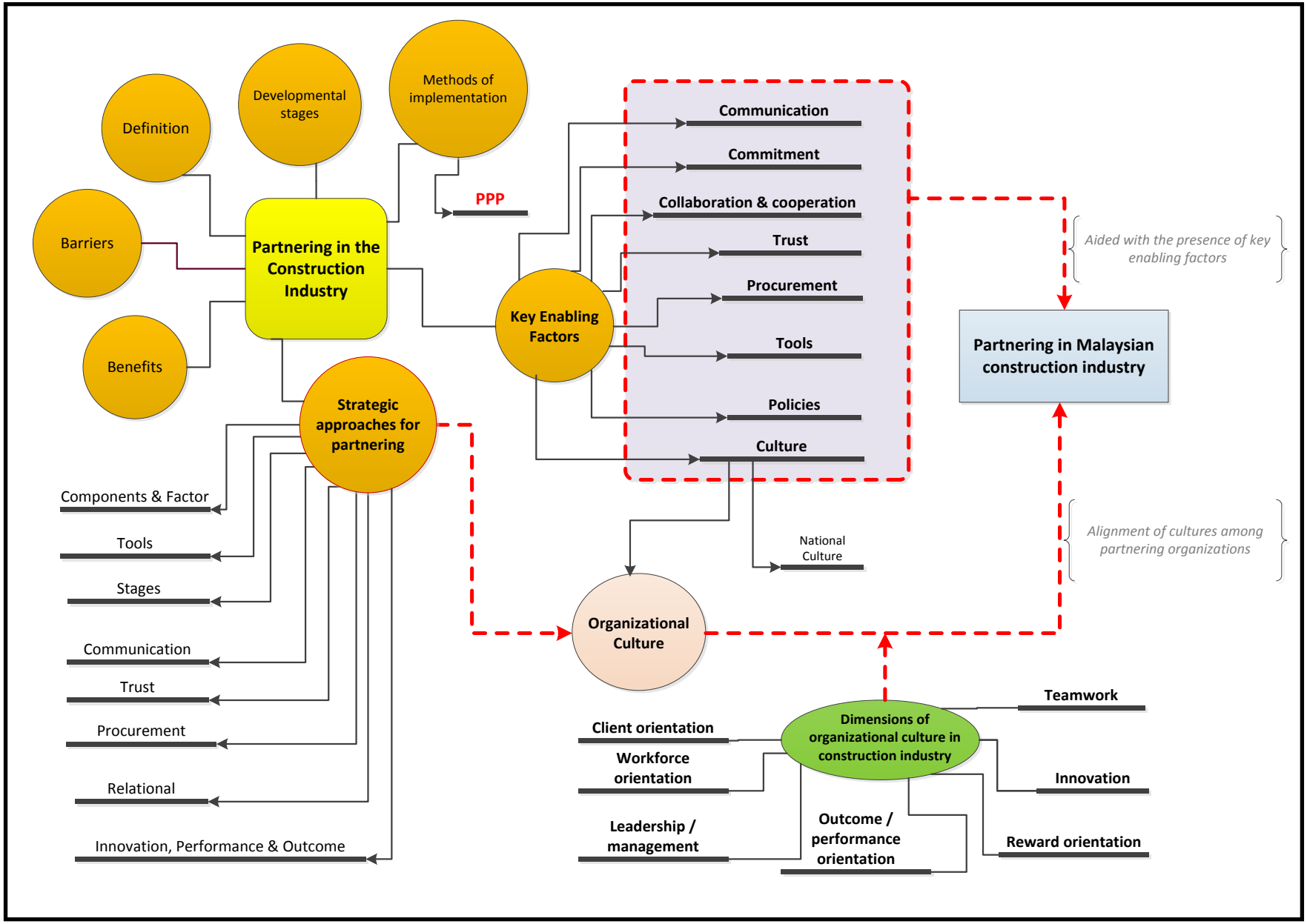


Figure 3.7: Conceptual mapping for this research

The orange circles at the top left of this figure indicate the partnering concepts that were explored within the literatures, from which the commonly cited key enabling factors were extracted. Within the literature review process, the existing strategic frameworks for partnering were also compiled and categorized. It was determined that there are visibly less frameworks for partnering which prioritize on cultural aspects of partnering firms, although culture is noted as one of the key enabling factors of partnering by many studies. At present there is no evidence of a partnering framework which aligns the different organizational cultures among firms involved in a partnering relationship. Therefore to highlight the focus of this research in line with the findings from literature, Figure 3.7 has illustrated the items which are going to be explored in the data collection stage connected by the red dashed line and arrows. These connected items are strategic approach, organizational culture, the dimensions of organizational culture, the key enablers for partnering and partnering in Malaysian construction industry.

Accordingly, to ensure that the research process undertaken in achieving the research aim is done in a systematic and structured manner, this thesis adopts the soft system methodology (SSM) as an underpinning theory which inspires the processes undertaken for this research. This research agrees with the understanding of SSM as an approach for tackling problematical, messy situations of all kind. The soft system methodology (SSM) was initially developed to solve problems concerned with efficiency and effectiveness which involves the use of highly complex modern technologies in human organizations (Checkland, 1981). However, due to its emphasis on human activity systems, SSM can also be applied beyond the boundaries of technology intensive organizations. There are two central concepts in the SSM;

- The wholeness of a system – views the defined human activity systems under investigation as more than just sum of its parts, requiring a holistic approach in research.
- The existence of hierarchy – views any given soft problem or area of concern can be regarded at different levels of resolution, with each level defined by the emergent attribute of the system at that specific level.

According to Patel (1995), the SSM is unique in the way it enables the researcher to embark on a process of learning about the real world situation being investigated while simultaneously seeking to improve it by analysing the situation within the paradigm of soft systems thinking and suggesting measures or recommendations to rectify the problem. The following Figure 3.8 portrays the 7-stage soft systems methodology developed by Checkland (1981).

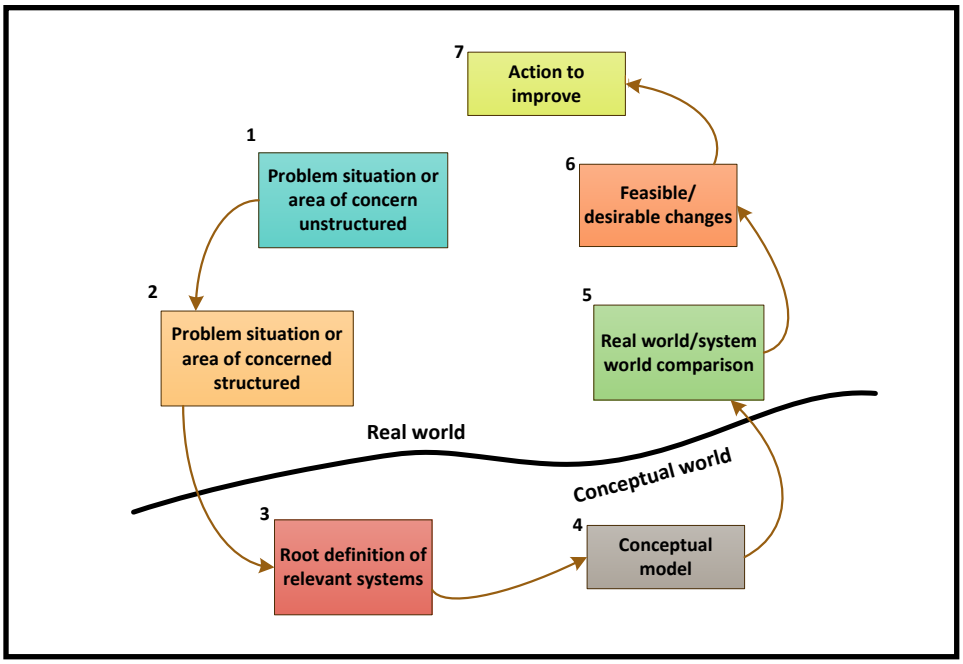


Figure 3.8: Soft System Methodology (Checkland, 1981)

The SSM is an action-oriented process of inquiry into problematic situations in which users learn their way from finding about the situation, to taking action to improve it (Checkland and Poulter, 2006). As reflected in SSM, the researcher identified the problem and has consequently assessed the nature of the inquiry for this specific area of concern. The next stage was the clarification of concepts through defining each and every concept that relates to the inquiry. Through the exploration of concepts in the literature review, a conceptual framework has then been developed which indicates the interplay of the concepts relevant to this research. The conceptual framework, which is particularly useful for streamlining the researcher's understanding and holistic thinking for this research, is as illustrated in the following Figure 3.9.

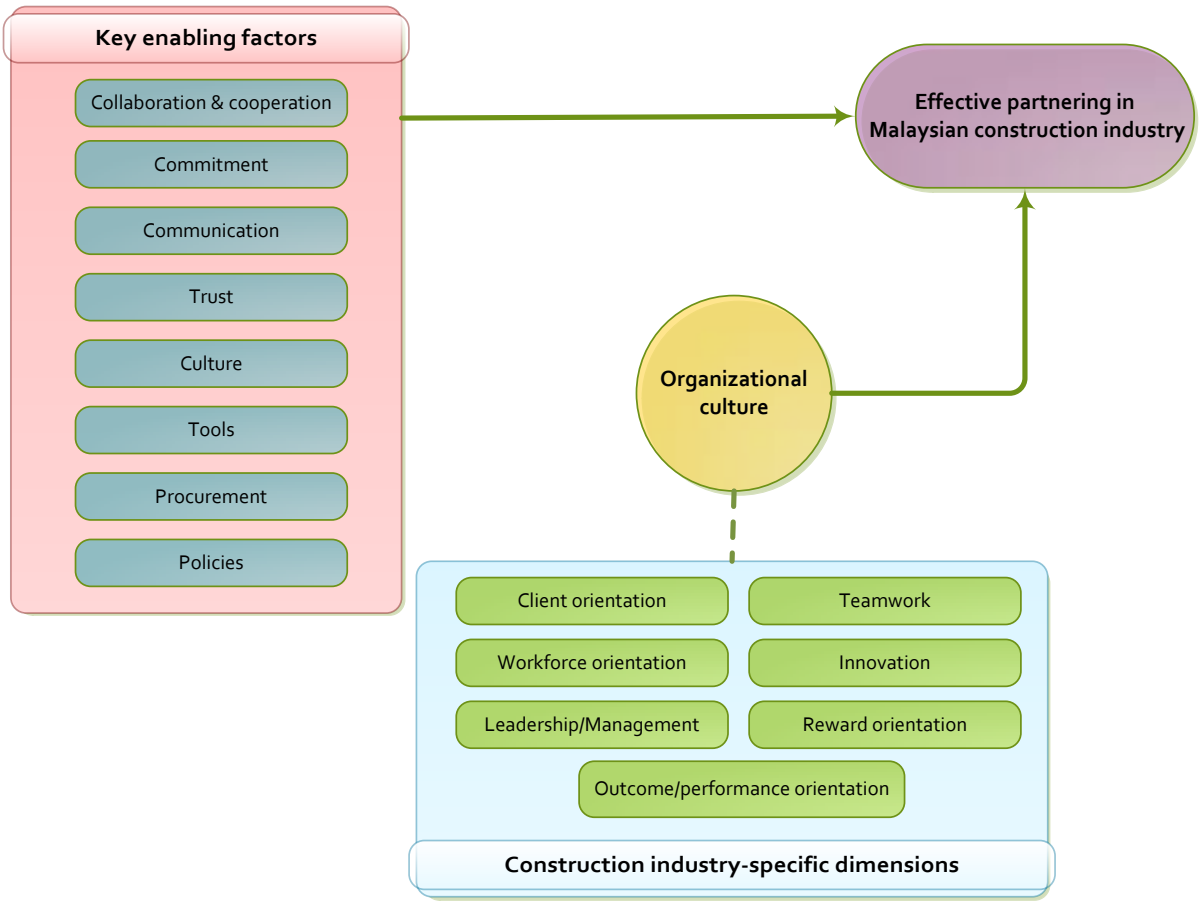


Figure 3.9: The conceptual framework for this research

From the literature review, it can be deducted that in order for effective partnering to be implemented, the key enabling factors and the appropriate organizational culture should be present. These concepts are extracted from the literature review and form the basis of the conceptual framework which directs the investigations to be made at the data collection stage.

Although the conceptual framework has illustrated the concepts similar to portraying the relationship between independent-mediating-dependent variables, it should be noted that this research is exploratory in nature, which was indicated by the research objectives in the previous Chapter 1. Furthermore, the aim of this research is to develop a strategic framework for partnering through aligning organizational cultures in Malaysian construction industry, which requires in-depth exploration of concepts, barriers, and challenges that indicates theory building rather than theory testing within the research context. Therefore, this conceptual framework serves only as visualization of concepts for further exploring in the real world the concepts identified in the conceptual world, which in this context are the partnering literatures. The presence of conceptual framework in a theory building research has been concurred by Merriam (2009) which highlighted that conceptual framework helps to

determine how the research problem and purpose are shaped as well as ensuring a comprehensive observation in research.

3.13 SUMMARY

The first few sections of this chapter have explored the background setting for this research, the Malaysian construction industry and reviewed the evolution of construction procurement systems in Malaysia. Looking at the procurement methods that have been applied within the industry throughout the years, it was clear that the industry has 'arrived' at partnering method at the right moment where the industry is now striving for global excellence, innovativeness and knowledgeable solution providers. This research will also be in an interesting position to explore the views of the practitioners within the construction industry with regards to partnering 3 years after it was formally introduced in Malaysia. Through the literature review conducted, it was justified that the implementation of partnering in providing solutions for the current challenges faced by the Malaysian construction industry. Although it is clear that partnering is crucial to Malaysian construction industry, the fact remains that Malaysia is a multi-cultural country with various ethnicities, and there is no evidence of strategic approaches for partnering in a developing multi-cultural country to this date. This highlights the relevance of this research in fulfilling the needs of the industry.

In relation to the importance of culture in partnering, this chapter has accordingly discussed the Malaysian culture and its main influences. Several known models and frameworks for assessing organizational culture has been reviewed as found in current literatures and each of these models and frameworks have provided the researcher with an understanding of how culture can be observed within an organization and the importance of culture in preparing an organization to achieve its collective goals. Due to its applicability in cross-cultural setting and previous applications in diverse industries, the Competing Values Framework (CVF) is chosen to be used in this research, as there is evidence of previous studies applying the CVF in identifying the type of organizational culture across various industries in Malaysia. To ensure that the cultural assessment is relevant to the context of this research, the dimensions of organizational culture in construction industry which are to be explored in this research are also identified to ensure a holistic understanding is achieved.

The chapter ends with a conceptual mapping for this research, derived from the concepts explored in Chapter 2 and this chapter, to visually describe the gap in which this research is attempting to fulfil. In fulfilling the aim and objectives of this research, the underpinning theory of soft system methodology (SSM) is applied in synthesizing the most appropriate manner in the research process undertaken. This chapter had complemented the previous chapter in the matters of understanding the research topic and justification of the research aims. In order to allow for a robust theory building and capturing of the concepts pertaining to this subject, the proper methods must be applied to conduct this research. The methodology of conducting this research will be addressed in the following Chapter 4.

CHAPTER 4

RESEARCH METHODOLOGY AND DESIGN

4.1 INTRODUCTION

This chapter describes in detail the research process undertaken for this study. Revisiting the conceptual mapping in the previous Chapter 3, there are concepts to be further explored in this research based on what that has been revealed by the literature review. Although it was noted that Malaysian construction industry will benefit from the implementation of partnering and strategic approaches for partnering exists, it was noted in Chapter 2 that none of these approaches have highlighted the importance of aligning organizational cultures among firms for effective partnering. For reasons noted in Chapter 3, organizational culture is a critical neutral platform for an industry which workforce is multi-cultural and from various ethnic backgrounds. Therefore, in order to achieve the aim of this research which is to develop a framework for partnering that aligns different organizational cultures; in-depth exploration is needed to determine the level of engagement of Malaysian construction firm in partnering as well as the characteristics of these firms in several aspects of organizational culture, based on the industry-specific dimensions previously identified.

In this chapter, the tenets of research philosophies will be explored, which will lead into the discussion of available research approach in bodies of knowledge. Next, the discussion will unravel how this research position itself within the fore mentioned philosophies and approach in relevance to the research context within the Malaysian construction industry. In line with the exploratory nature of this research, this chapter will continue to discuss various research techniques to be adapted that satisfies the research objectives in addition to enhancing theory building in this research. This chapter ends with a summation of the philosophies, approach and techniques selected in line with the position of this research.

4.2 THE RESEARCH PROCESS MODEL

Methodology is an integral part of any research, simply because it is the common ground that can be understood and related to by researchers everywhere. In determining the methodology for a research, layers of knowledge pertaining to that research must be explored via a philosophical review. The exploration of philosophical assumptions through the lenses of known paradigms will aid the researcher in deciding which approach is most applicable to the research topic and assist the researcher in choosing the research strategies to implement the research. Holden and Lynch (2004) implies that a philosophical review can have a dual effect on the researcher; (1) it may open their mind to other possibilities, therefore enriching their own research abilities, and (2) it can enhance their confidence in the appropriateness of their methodology to the research problem, which will in turn enhance their confidence in their research results.

For ensuring that the research process is managed effectively, it is crucial to identify the different phases involved in a research. Kagioglou et. al. (2000), Saunders et. al. (2009) and Keraminiyage (2009) have all outlined the importance of segregating the research activities into distinct stages, layers or phases which provides a sense of sequence and serve as a guideline for the researcher to manage the research in ensuring the research process is executed as planned. Therefore it is imperative that the exploration of research philosophies is systematically conducted through the adaptation of a research process model. For that purpose, this thesis adopts the 'nested methodology' model proposed by Kagioglou et al (2000) in identifying the philosophical standpoints appropriate in achieving the aim and objectives for this research. This model comprised of three layers of knowledge to be considered in which the research places itself against; the research philosophies, the research approach and the research strategies. The nested methodology research model is as shown in the following Figure 4.1.

Figure 4.1: Nested methodology research model (Kagioglou et al, 2000)

The outer layer of the model represents the research philosophies, which energizes and guides the inner layers of research approach and research techniques. Research approach consists of the dominant theory generation and testing methods. Research techniques comprise data collection tools. This model is selected as it provides the researcher with ***'an interactive portfolio of approaches and techniques that benefited from meta-level direction and cohesion'*** (Kagioglou et al, 2000: page 143). The nested methodology provides a simple yet comprehensive framework for research process that allows the researcher to review each layers systematically, which justifications made in outer layers further inform the decisions to be made for the subsequent inner layers. For the purpose of providing a systematic exploration of choices made in view of the research methodology, the discussion that leads to understanding the philosophical stance in this research shall follow the order of the layers in this model.

4.3 RESEARCH PHILOSOPHIES

Each researcher will make certain assumptions in regards to their research. Research philosophy is dependent on the researcher's thinking and assumptions about the progress of knowledge which, in turn, affects the way the research is done (Saunders et al, 2009). The quality of research is highly dependent on adhering with the philosophical issues. Easterby-Smith et al (2008) noted three main purposes in proper understanding of philosophical issues;

1. Clarification of the research design, which goes beyond the methods of data collection and analysis.
2. Assist in recognising which research design is most suited and which is not, within the context of a specific research.
3. Enabling researchers to identify, and create research designs which might be novel to their past experiences.

Research philosophical traditions are comprised of two standpoints; positivist and interpretivist (Williamson, 2006). These are also known as ***theoretical perspectives*** (Creswell, 2003), ***research philosophies*** (Easterby-Smith et al, 2002) and ***perceptions of reality*** (Sarantakos, 2005). In general, these two standpoints, differs in the assumption on the nature of reality. The positivist standpoint sees the social world existing externally, which

properties should be measured through objective methods, rather than being inferred subjectively through sensation, reflection or intuition (Easterby-Smith et al, 2008). In the field of science, positivists consider that knowledge can only be based on what can be measured and experienced (Ijasan, 2011). This standpoint is commonly paired with the ontological assumption of reality being external and objective (Nawi, 2012; Keraminitage, 2009 and Easterby-Smith, 2002).

Contrastingly, the interpretivist standpoint focuses on the way people make sense of the world, especially through sharing their experiences with others via the medium of language (Easterby-Smith et al, 2008). Interpretivists see the social world as not excluded from its properties, and suggest that knowledge is constructed based on the experience of the world, hence reality is constructed (Tobi, 2010). In addition, Creswell (2003), Amaratunga et al (2002) and Ijasan (2011) have all indicated that the interpretivism philosophical standpoint is reflected by the subjective aspects of human activity and interaction, placing higher priority on the meaning of interaction in the dynamic world rather than the measurement of the social phenomena. Table 4.1 below shows the differences between the characteristics of positivism and interpretivism research philosophies.

Table 4.1: The differences between Positivism and Interpretivism (Easterby-Smith et al, 2002)

	Positivism	Interpretivism
The observer	Must be independent	Is part of what is being observed
Human interest	Should be irrelevant	Is the main driver of the science
Explanations	Must demonstrate causation	Aim to increase general understanding of the situation
Research progress	Hypotheses and deduction	Gathering rich data from which ideas are induced
Concepts	Need to be operationalized so that they can be measured	Should incorporate stakeholder perspectives
Units of analysis	Should be produced to the simplest terms	May include the complexity of the 'whole' situation
Methods of generalisation	Statistical probability	Theoretical abstraction
Sampling requirement	Large numbers selected randomly	Small number of cases chosen for specific reasons

The literature review in Chapter 2 and Chapter 3 has identified that there is a gap in linking success of partnering with appropriate organizational cultures, despite culture being mentioned as one of the elements of partnering (Ngowi and Pienaar, 2005; Fletcher and Fang, 2006; Ivory, 2005; Chan et al, 2005). At present there are no guidelines that can be used by

the construction organizations on how to achieve successful partnering relationships by aligning their organizational culture with their partner firms, specifically in the Malaysian construction industry context.

As the main aim of this research is to develop a framework for effective partnering through aligning different organizational cultures, this research will seek input from the practitioners on how their organizational respond to partnering efforts, and whether their organization is demonstrating the appropriate culture for those efforts. In depth understanding of current situation, problems, issues, feelings, attitudes and opportunities within the construction firm is crucial to gain answers needed to develop the framework. Saunders et al (2009) had implied that individuals will perceive different situations in varying ways as a consequence of their own view of the world, where their interpretations are likely to affect their actions and the nature of their social interaction with others. In this aspect cultures are emergent and changes every day, continuously constructed and reconstructed by people within it. Furthermore, Strauss and Corbin (1990) have also concluded that the interpretivist paradigm is useful in understanding what lies behind a phenomenon. Keeping in mind of all these above mentioned factors, it is therefore very clear that ***the research positioning of interpretivism is the most appropriate philosophy for this research.***

In a research project, ontological, epistemological and axiological assumptions are interconnected and form the underlying characteristics of the research philosophy (Keraminitage, 2009). The discussion regarding philosophical assumptions in the following section shall include the stance toward the nature of reality (ontology), how the researcher knows what she or he knows (epistemology), and finally the roles of values in the research (axiology).

4.3.1 ONTOLOGICAL ASSUMPTIONS

Ontology is concerned with the nature of reality. It encompasses all the questions that a researcher has about the way the world operates and the commitment held to particular views. Bryman and Bell (2007), Hatch and Cunliffe (2006) and Sutrisna (2009) have all identified the two positions of ontology; objectivism and constructivism (subjectivism). Hatch and Cunliffe (2006) relates the position of objectivism with the question of whether reality exists

independently of those who live in it. Objectivism implies that social phenomena and the categories that are in use in everyday life have an existence that is independent or separate from actors (Bryman and Bell, 2007). For organizations and cultures, the social entity in question comes across as something that excludes the actor, and can almost be said as having a tangible reality of its own. It has the characteristics of an object and hence of having an objective reality. Contrastingly, constructivism (subjectivism) is an ontological position which asserts social phenomena and their meanings are continually being accomplished by social actors. Hatch and Cunliffe (2006) identifies that the questions that comes to mind concerning constructivism is whether reality exists through the experience of it.

Within the philosophical body of knowledge, there exists another classification of ontological positions, namely realism and idealism (Sexton, 2007 and Aouad, 2009). According to Aouad (2009) realism can be defined as a commonly experienced external reality with a predetermined nature and structure, while idealism is defined simply as an unknown reality perceived in different ways by individuals. Sexton (2009) describes ontology as the notion a researcher made about the nature of reality, and therefore can be classified into realism and idealism. Therefore it can be identified that there are two differing ontological positions; objectivism (realism) and constructivism (idealism).

Based on the specific context of this research which is to explore the level of engagement in partnering and the types of organizational culture that contributes to that level of engagement, ***this research undertakes the constructivism ontological assumption that reality is continuously constructed by the social actors***, who are the practitioners in Malaysian construction industry rather than the actors having their own fixed tangible reality. This agrees with the notion that constructivism asserts that phenomena and their meanings are continually being accomplished by the actors (Sutrisna, 2009). This position contrasted the objectivism position in thinking that organization and cultures have pre-given categories and therefore confront social actors as external realities that they have no role in controlling.

4.3.2 EPISTEMOLOGICAL ASSUMPTIONS

Epistemology concerns what constitutes acceptable knowledge in a field of study (Saunders et al, 2009). In epistemology, the main issue is to know whether the social world can be

studied in the similar manner as the natural sciences, which can be studied according to principles, procedures and ethos. Sutrisna (2009) describes that epistemology views the theory of knowledge with regards to its methods, validation and possible methods of acquiring knowledge in the assumed reality. There are two contrasting positions under epistemology considerations, namely positivism and interpretivism.

The first epistemological position, positivism views reality as it is represented by objects that are considered to be real, and have their own separate existence other than the one known by the positivist researcher. The positivist epistemological position applies existing theory to develop a hypothesis which is tested and confirmed in the whole or in parts leading to further development of a theory (Saunders et al, 2009). A positivist researcher would argue that data collected from a research process is far less open to bias and is more objective, hence applying the deductive approach throughout the research process. Following this argument, Sarantakos (2005), Easterby-Smith et al (2002) and Remenyi et al (2004) have all pointed out that the use of deductive approach will infer that positivist research equals to quantitative research without requiring further justification.

The second epistemological position, interpretivism includes the views of researchers who think that the subject matter of the social sciences, people and their institutions, organizations or cultures, is fundamentally different from the subject matter of the natural sciences. Bryman and Bell (2007) further stated that interpretivists believe that the study of the social world requires a different logic of research procedure, one that reflects the distinctiveness of humans as against the natural order. Following this proposition, qualitative and naturalistic approaches were used to inductively and holistically comprehend the human experience in context-specific settings in research undertaking the interpretivism epistemological position (Monty, 2009).

Revisiting the specific context of this research which will explore the industry's perception regarding their level of engagement in partnering practices, ***the interpretivist epistemological position is identified as the appropriate position for this research***. This is due to the fact this epistemological assumption implies knowledge should be gathered through scrutinizing the views of the social actors; which are in this context, the practitioners of the Malaysian construction industry. The interpretivist epistemological stance chosen suggests in depth

investigation of the main data, which is inclined towards qualitative methods of data collection.

It can be seen that the choice of epistemological stance within the context of research in question will further reflect the research approach to be applied in achieving the research objectives. The positivism stance is reflected in quantitative approaches, while the interpretivism stance involves the use of qualitative approaches. The next section will address the axiological assumptions in research; whether a research is consider as value-laden or value-free in a particular field of knowledge.

4.3.3 AXIOLOGICAL ASSUMPTIONS

Axiology is a branch of philosophy that studies judgements about value. According to Saunders et al (2009), researchers demonstrate axiological skill by being able to articulate their values as a basis for making judgements about what research they are conducting and how they go about doing it. Sexton (2007) implies that the axiological assumptions are about the nature of value and and the foundation of value judgements, which can be determined as value-free and unbiased or value-laden and biased. Axiology depends crucially on notions of value and sometimes held to lay the groundwork for the philosophical fields (Nawi, 2012 and Tobi, 2010). In line with this argument, the following Figure 4.2 indicates the philosophical orientations in research, and how axiological perspectives have formed congruence between the ontological and epistemological positions, and will further inform the standards and requirements of an acceptable research approach and research technique, as proposed by Sexton (2003).

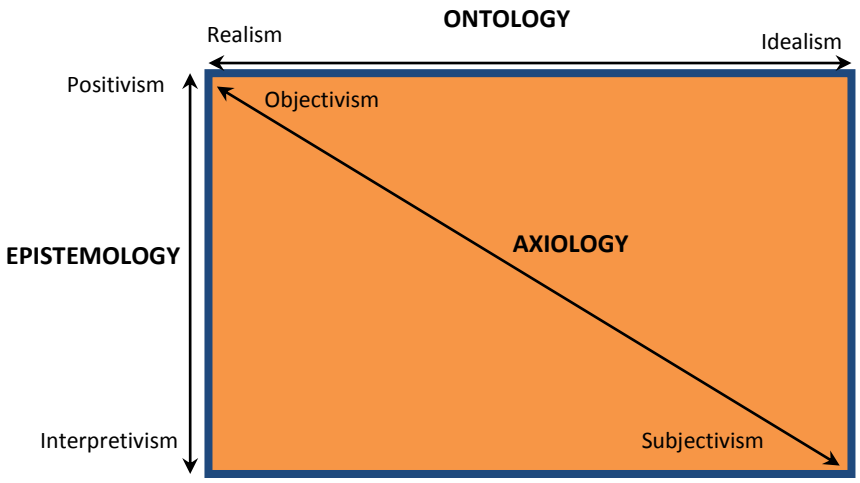


Figure 4.2: Philosophical orientations in research (Sexton, 2003)

Following the previous discussion, there are two axiological positions identified. The objectivist stance reflected that research is value-free and unbiased, while contrastingly the subjectivist stance refers to the research being value-laden and biased. In line with the philosophical standpoints for this research that was identified in the previous sections; which implies that reality of the situation under research is continuously constructed by the practitioners of Malaysian construction industry, and that knowledge which leads to solution must be gathered through exploring the views of these practitioners through in-depth investigation for rich and specific understanding of data; ***this research takes on the axiological standpoint in which research is value-laden.*** However, to ensure that this research also benefits from generic input of the Malaysian construction industry, quantitative methods will also be used to explore the insights of random construction professionals. These research approaches will be discussed accordingly in the following section.

With all layers of philosophical theories discussed, the next section will correspond to addressing the research approach which satisfies the philosophical standpoints identified in this section this research. The following section entails the considerations made on selecting the appropriate approach for this research.

4.4 RESEARCH APPROACH

Saunders et al (2009) stated that the extent of to which a researcher is clear about the theory raises important questions relating to the research design. A researcher needs to determine which approach is most suited to answer her research questions. The previous section has extensively discussed the research philosophies, and has provided the basis for appropriate research approach to be used in this research. Kagioglou et al (2000) stated that research approach is comprised of the dominant theory generation and testing methods. In discussing theory generation, it is useful to know the two different ways of undertaking the reasoning of the research, namely; inductive and deductive methods (Sutrisna, 2009).

Deductive theory generation occurs when a research project begins with a theory and hypothesis. The hypothesis is deducted based on what is known from the research area, which will then be subjected to empirical testing.Simply stated, a deductive research approach goes through the stages of theory formation, hypothesis development, data collection, compilation

of findings, confirmation or rejection of hypothesis and the revision of theory (Hyde, 2000; Grix, 2010). In short, the deductive theory generation is essentially theory testing. Many researches have linked the deductive approach with quantitative testing methods (Bryman and Bell, 2007).

On the other hand, the inductive theory generation views theory as the outcome of research or simply put as theory building. Theory is developed based on the conclusions from the findings (Saunders et al, 2003; Landman, 2000), and takes into consideration the unique characteristics of the context in research.Within the boundaries of an inductive research, small sample of subjects is regarded as more appropriate, and is highly concerned with the context in which the events are taking place. It is very likely for researchers using this approach will make use of qualitative data and a variety of techniques to collect these data in order to find alternative explanations for the situation (Bryman and Bell, 2007). The process of inductive theory generation is as shown in the following Figure 4.4.

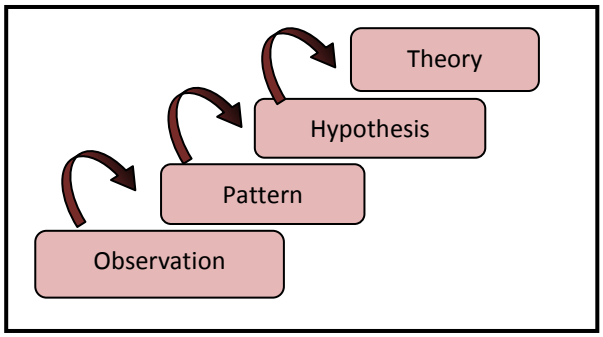


Figure 4.4: Inductive theory generation process

Based on the research philosophies discussed and taking into consideration of the characteristics of this study which requires theory building from the opinions and views of practitioners in the Malaysian construction industry; ***this research is well suited with inductive reasoning***. The following Table 4.2 indicates the manner in which quantitative and qualitative methods differ according to research approach adopted, in line with epistemological and ontological considerations.

Table 4.2: Fundamental differences between quantitative and qualitative methods (Bryman and Bell, 2007)

	Quantitative	Qualitative
Research Approach	Deductive; testing of theory	Inductive, generation of theory
Epistemological assumption	Natural science model, in particular positivism	Interpretivism
Ontological assumption	Objectivism	Constructivism

Although the inductive reasoning in research commonly reflects the use of qualitative methods (Mason, 2002), this research will be employing a mixed methodology in order to obtain a comprehensive data which will lead to a more robust conclusion. The next section describes the choices of strategies in data collection and the most appropriate strategy to be used in this research.

4.5 RESEARCH STRATEGY

Once the philosophies and approach has been decided for a particular research, the next stage is to explore the various strategies available in order to proceed with the research. To ensure congruence within the foundation of research, the selection of research strategy should be inspired by the researcher's philosophical stance and approach. Essentially, research strategy (Yin, 2009; Saunders et al, 2009) or research design (Bryman and Bell, 2007; Sexton, 2003) provides the researcher a 'roadmap' or a 'plan of action' in order to translate the aims of the research into achievable results. Saunders et al (2009) indicated that research strategy is critical in enabling the researcher to answer research questions and achieve the research objectives. In selecting the most appropriate strategy of research, Yin (2009) noted three specific conditions; ***the type of research question***, ***the control of the researcher over behavioral events***, and ***the degree of focus on contemporary as opposed to historical events***. The author also had listed five different types of research strategies, namely; experiments, survey, archival analysis, history and case study. Saunders et al (2009) also added to the body of knowledge by classifying seven types of research strategies known as; experiment, survey, case study, action research, grounded theory, ethnography and archival research.

There some authors who labeled research strategy as research design. Bryman and Bell (2007) defined research strategy as a general orientation to the conduct of business research;

which can be classified as quantitative or qualitative in nature. The authors further identified research design as a framework for the collection and analysis of data, which reflect the decisions made on a range of dimensions of the research process and also classified five types of research designs available; experimental, survey, longitudinal, case study and comparative. Earlier on, Sexton (2003) has categorized research design into five main research strategies, which comprised of experiments, surveys, case studies, action research and ethnography.

The selection of research strategies should correspond in answering the research questions made at the foundation of the research. Each strategy comes with its own advantages, as well as answers to certain types of research questions. The following Table 4.3 describes the relevance of available research strategies to types of research questions, and other requirements in research.

Table 4.3: Comparison of various research strategies (Nawi, 2012)

Research Strategies	Advantages	Disadvantages	Form of research question	Requires control of behavioural events?	Focuses on contemporary events?
Experiment	Clear possibility and answer; controlled context, replicable and generable; save time and resources; causal relationship	Requires specific knowledge; artificial; ethical problem due to variable control; quantitative does not really explain	How Why	Yes	Yes
Survey	Widely used; qualitative and quantitative; directive; affordability of large data; high predictability	Risk of misplacing findings; difficult to obtain truthful data; may subject to bias; less detail and depth; may not be applicable to phenomenon studies	Who What Where How How many How much	No	Yes
Case study	In-depth, capture complexities, relationship; multiple data sources and methods; flexible time and space; less artificial	Problem of generalization; focus on natural situation; unpredictable; unacceptable for some course	How Why	No	Yes
Action research	Collaborative; the researchers and context integrity; for practitioner-researchers; professional and personal development; practical	Difficult for new researcher; exclusive; work setting influence; unacceptable for some course	How	Yes	Yes
Grounded theory	Generating theory from a research; flexible structure; detailed set of rules and procedures	Too specific; ignore the previous knowledge to the analysis; many variants of the strategy	How (Focus on process)	No	Yes
Ethnography	Feasible within the constraint of time and researchers; direct observation; no specific data collection methods; rich data; deal with culture, inclusive.	Difficult for new researcher; high skill needed; descriptive to explanative; ethical issues; limited accessibility; problem of generalization.	Why (To understand context and perception)	No	No
Archival research (documentary study)	Independent researcher; researcher has no influence on the quality of documents; can be reviewed repeatedly.	The documents might be produced for specific reason; lead to bias; irretrievability.	Who What Where How many How much	No	Yes/No
History	Applicable deal with 'dead' sources of evidence; can be reviewed repeatedly	The data is limited in term of in-depth descriptions (no specific reason produced)	How Why	No	No

Sources: Sarantakos (2005), Robson (2007), Yin (2009), Saunders et al (2009), Grix (2010) and Setiawan (2011)

In selecting the best methodological approach for this research, the type of research question formulated at the beginning stage of this research should be revisited. These questions are:

1. What are the partnering factors that have existed in Malaysia, and how many have yet to be developed?
2. What types of organizational culture exists in Malaysian construction firms?

3. How can organizational culture assist the success of partnering to benefit the Malaysian construction industry?

Due to the nature of this research, the main data will be obtained based on the social interaction of the construction practitioners in the Malaysian construction industry. Therefore, there is no control of behavioural events required, as this research values the richness of information provided from these social interactions. Considering no control of behavioural events is required, ***experiment*** and ***action research*** methodological approach is eliminated from selection. In parallel to this, the types of research question in this study are 'What' and 'How', thus eradicating the choice of ***action research***, ***grounded theory***, ***ethnography***, and ***history*** research strategies which do not answer to 'What' research questions. The richness of information is gained from in-depth study involving construction professionals and thus ***archival research*** could not be the methodological approach adopted in this research as it requires research into archives and periodic documents. Henceforth, the strategies left to be considered are just ***case study*** and ***survey***.

Yin (2009) defines ***case study*** as an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context especially when the boundaries between phenomenon and context are not clearly evident. Case study research is a qualitative approach in which the investigator explores a bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information such as; observations, interviews, audiovisual material, and documents, and reports a case description and case-based themes (Creswell, 2007). Bryman and Bell (2007) implied that a case could be; a single organization, a single location, a person or a single event.

In a case study, the case is an object of interest in its own right and the researcher aims to provide an in-depth understanding of it. In a multiple case study, an issue is selected and the researcher might select for study several programs from several research sites or multiple programs within a single site (Creswell, 2007). This research has intensely considered applying the case study strategy bearing in mind its many advantages, however due to the first two research questions in this study are 'What' questions, case study has been eliminated in selection as 'What' questions are best resolved by the ***survey*** research strategy as specified by Yin (2003).

Surveys are the most commonly used method of quantitative or qualitative data collection in social science research and is most frequently used to answer who, what, where, how, how much and how many research questions (Saunders et al, 2009; Yin, 2009; Sarantakos, 2005). In this regard, ***the survey strategy or research design is viewed as the best way to retrieve information in answering the research questions for this research*** which are comprised of 'What' and 'How' questions. Considering the aim of this research which is to develop a framework for partnering through the alignment of organizational cultures among construction firms, this research requires a comprehensive review of literatures serving as the secondary data, combined with primary data derived from investigations among the industry practitioners.

In order to arrive at a more robust conclusion, this research will be employing a mixed methodological survey strategy in collecting the primary data. A combination of methods in the form of qualitative and quantitative approaches will be used in this research. The next section describes in detail the mixed methods design used in this research.

4.5.1 MIXED METHODS DESIGN

Based on the previous exploration of research philosophies and techniques, it was that the objectives and aim established for this research are most suited with mixed methodologies design. Although this research leans towards intrepretivist stance which research techniques are commonly associated with qualitative methods, the use of quantitative methods in this research is used to provide a general data which will support the more specific data obtained through the qualitative methods. Creswell et al (2003) define the mixed methodology research as a study that involves the collection or analysis of both quantitative and/or qualitative data in a single study which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process of research.

In this research, the ***convergent parallel mixed methods*** design is applied where both qualitative and quantitative data were collected during the same phase of data collection, as identified by Creswell and Plano Clark (2011). The two sets of results obtained in the convergent parallel mixed design will be merged together to form an overall interpretation for

the research findings. This design is chosen due to its advantages in fulfilling the need to collect both types of data simultaneously due to the researcher's limitations in time frame, as well as placing equal value for both types of data in understanding the research problem (Fischler, 2012). In the convergent design, there are 3 variations; parallel-database, data-transformation and data validation, as duly noted by Creswell and Plano Clark (2011). In examining the constructs of the actual phenomenon with regards to partnering in Malaysian construction industry, the parallel-database approach is used in this research for structuring the convergent mixed methods design that could be reflected by the use of both qualitative data from the private SME consultant firms and quantitative data from the construction practitioners.

The qualitative methods used in this research are in the form of semi structured interviews, involving 14 practitioners from consultant engineering design firms in Malaysia. These 14 participants and their organizations will be described in the following Chapter 5. The number of interviews conducted was adequate for arriving at generalization and achieving saturation in qualitative data, and satisfies the requirements in Smith (2003) who stated the range of 6-8 interviews and Rubin and Rubin (2005) whom proposed the range of 10-15 interviews. Semi structured interviews are chosen as the main method of inquiry due to the advantages in delving into intangible themes from the literature, thus enabling the researcher to further analyze the data and allow for contextualization in real situation. On the other hand, the quantitative methods applied in the form of questionnaire survey involving 100 respondents in the Malaysian construction industry aimed at capturing the generic opinions for this research.

In fulfilling the requirement of providing an alternative data set, the questionnaire has been chosen as the most appropriate quantitative method for this research, to complement the interview data. The two independent databases of results will then be compared and integrated at the discussion stage of this thesis to guide the formulation of the framework for effective partnering through aligning organizational cultures as well as synthesizing a robust conclusion for this research. The next section will discuss the research techniques selected; literature review, semi structured interviews and questionnaires.

4.6 RESEARCH TECHNIQUES

This research leans toward the constructivist ontological stance, as well as assuming the interpretivist epistemological position. The axiological standpoint in this research is that research is value-laden, thus reflected in the inductive approach where theory is generated from the richness of information obtained from the participants in this research. In order to arrive at a more robust conclusion, a mixed methodology is adopted gaining the advantages of both disciplines; in-depth reviews from semi structured interviews which are qualitative in nature, and questionnaires to capture the generic opinions of the industry which are more quantitative in nature. This research predominantly applies survey design, which mixed methodology primary data is supported by the secondary data derived from the literatures. This section will discuss in detail the research techniques employed in this research; the literature review, semi structured interviews and questionnaire surveys.

4.6.1 LITERATURE REVIEW

Literature review is the documentation of a comprehensive review of the published and unpublished work from secondary sources of data in the areas of specific interest to the researcher (Sekaran, 2003). A literature review is also intended to avoid the researcher from reinventing the same issues that have been noted by previous researchers, as well as ensuring the researcher's knowledge is up-to-date within the same research area (Kulatunga, 2008). Bryman and Bell (2007) highlighted the importance of literature review in developing an argument about the significance of a research and where it leads. A competent literature review should extend beyond mere reproduction of theories and opinions of previous scholars, as well as interpret previous theories and uses these ideas to support a particular viewpoint or argument.

The literature review conducted in this research is meant to capture the gap in knowledge for partnering in Malaysian construction industry and to gain secondary data for this research. Therefore, the review conducted has included various literatures on partnering, organizational culture, their factors and elements, frameworks, previous case studies and the state of partnering implementation in Malaysian construction in order to gain the insight on current scenario.

4.6.2 SEMI-STRUCTURED INTERVIEWS

As mentioned previously, this research employs a mixed methodology research design, where both qualitative and quantitative methods will be used at data collection stage. The qualitative method applied in this research is in the form of semi-structured interviews, which includes 14 participants from consultant engineering design firms. Bryman and Bell (2007) categorizes qualitative interviewing into 2 main types which are; ***unstructured*** and ***semi-structured*** interviews. Unstructured interviews warrants the interviewee to respond freely, with the interviewer asking a single question and responding only to points deemed worthy to be followed up. According to Saunders et al (2009), unstructured interviews have also been named informant interview due to the fact that it is the interviewee's perception which guides the conduct of the interview.

The semi-structured interview refers to a context in which the interviewer has a series of questions that are in the general form of an interview schedule but is able to vary the sequence of the questions (Bryman and Bell, 2007). This type of interviews are widely used in qualitative research as it gives the respondents the opportunity to relate to the research matter in their own opinion and insights, which in return may yield enriched information for the researcher. The richness and vividness of the interview data enables the researcher to see and understand what is reflected rather more abstractly in other kinds of data (Gillham, 2000). Yin (2011) noted three main characteristics of semi-structured interview which sets it apart from the structured interviews:

1. The relationship between the researcher and the participant is not strictly scripted;
2. The researcher does not try to adopt any uniform behavior or demeanor for every interview;
3. The more important questions in the interview will be *open*-ended rather than *close*-ended questions.

In this research, semi-structured interviews are selected as the main technique for qualitative data collection due to the needs of this research in gathering information from the practitioners in the Malaysian construction industry. The interviews were conducted with the aid of an interview guide, which has provided a 'loose' format of questioning that enables the researcher not only to ask the standard set of questions, but also adjust the sequence of the questions and follow up on specific issues mentioned by the participants, which were not

necessarily included in the interview guide, however are just as critical. The interviews were conducted face-to-face, allowing full proximity between the researcher and participant during the data collection process. The demographic of participants included in the interview sessions and the qualitative data analysis conducted with the aid of NVivo 10 (Edhlund and McDougall, 2013) will be discussed in detail in Chapter 5, which also will include issues regarding reliability and validity of the qualitative data. The interview schedule used in this research is included in Appendix section of this thesis.

4.6.3 QUESTIONNAIRE SURVEYS

Questionnaires are research tools which are made up of series of questions and otherprompts to obtain information from respondents. Sekaran (2003) defined questionnaire as a pre-formulated written set of questions to which respondents record their answers, usually within rather closely defined alternatives. They can be administered personally, mailed to the respondent or can be distributed electronically. Although questionnaires may be used as the only data collection method, it may be better to link them with other methods in a multiple-methods research design (Saunders et al, 2009). In this research, questionnaires will be deployed as a supporting tool to provide additional quantitative data.

The purpose of the questionnaires in this research is to assist the researcher in obtaining the general opinion of the practitioners in the Malaysian construction industry about the implementation of partnering and the type of organizational culture which exist in their firms. The use of questionnaire also enables the researcher to obtain information from a larger group of respondents within the limited time frame, as well as providing a comparison of data from the small sample of interview participants which are more specific in nature. The data collected via questionnaire survey will be analyzed by SPSS 17 (Field, 2009) and will be used in comparing similar data obtained through qualitative methods. The method of distribution and sampling concerning the questionnaire will be discussed in detail in Chapter 6 of this thesis. A sample of the questionnaire used in this research is included in the Appendix section of this thesis.

4.7 OBJECTIVES OF THIS RESEARCH AND THE CORRESPONDING METHODS OF INVESTIGATION

The previous section has discussed the methods of investigation or research techniques which are used to achieve the objectives in this research. Table 4.4 below displays the research objectives which will be fulfilled through the corresponding methods of investigation previously discussed.

Table 4.4: Research objectives in relation to methods of investigation

No	Research objectives	Methods of investigation		
		Literature review	Semi-structured interviews	Questionnaires
1	To develop an understanding of partnering in general; its overall concept and existing frameworks in the construction industry.	X		
2	To investigate the relationship between organizational culture and its relationship with partnering in the construction industry.	X		
3	To determine the level of engagement in partnering practices among private SME consultant firms in Malaysian construction industry; as well as the enablers or barriers in partnering as perceived by these firms.		X	X
4	To explore the cultural barriers in Malaysian context and the types of organizational culture among private SME consultant firms in Malaysian construction industry.		X	X
5	To develop a framework for effective partnering through aligning different organizational cultures in Malaysian construction industry.	X	X	X

For the purpose of data collection, this research will be employing a mixed methods design with the use of questionnaires for obtaining the generic quantitative data, and semi-structured interviews for gaining the rich qualitative data. With that in mind, these two methods are executed under four specific themes which reflected the research objectives to be achieved in the data collection stage. These four themes are:

1. Understanding of the partnering concept
2. Awareness of partnering practices

3. Organizational culture and organizational structure in design firms
4. Role of organizational culture in partnering

These four themes guided the development of questionnaire items and the interview questions to enable comparison between the qualitative and quantitative data. Appendix 1 of this thesis shows the interview schedule used for qualitative data collection in this research, which questions were developed according to the themes previously mentioned and the questions were organized based on the themes as well to ensure a smooth transition of topics during the interview sessions. The items included in the questionnaires were derived from the enabling factors found in current partnering literature and the questionnaire used in this research is shown in Appendix 2 of this thesis. Accordingly, Chapter 5 (Qualitative Data Analysis) and Chapter 6 (Quantitative Data Analysis) in this thesis will elaborate the analysis conducted on the data collected, organized under the themes mentioned. The next section shall address the reliability and validity issues associated with the techniques applied in this research.

4.8 RELIABILITY AND VALIDITY ISSUES

Reliability in research is concerned with the consistency of the research instrument in producing accurate results. As this study obtains both qualitative and quantitative data, very different and distinct reliability and validity issues need to be considered. According to Schreier (2012), reliability is a criterion that is typically used in evaluating the quality of a specific instrument, such as a questionnaire, a test or a coding frame. In qualitative content analysis, the reliability test can be carried out on the coding frame to ensure that it is reliable, and therefore translates into consistency. Schreier (2012) proposes two methods of reliable test:

1. ***Comparisons across persons***; where two or more coders use the same coding frame to analyse the same units of coding, and they do so independently of each other. The coding frame is considered reliable if the results apply across different coders.
2. ***Comparisons across points in time***; where one coder uses the same coding frame to analyse the same units of coding, after a certain period of time. The coding frame is considered reliable if the results remain stable over time.

For the purpose of this research, the author has compared the results of the coding frame across points in time to fulfil the qualitative reliability issue. Whether the coding is compared by different coders or compared by a single coder at different points in time, the coding frame is considered reliable to the extent that the coding is consistent.

In relaying the validity of the qualitative instrument, Creswell (2009) stresses the point that qualitative validity signifies procedures that the researcher had undergone to test the accuracy of findings. Among the procedures suggested by Creswell (2009) to determine qualitative validity which had been carried out in this research were:

1. ***Member checking***; where the results from the analysis were shown to the interview participants and determined whether the participants agree with the accuracy of the findings.
2. ***Thick and rich descriptions***; where rich and thick descriptions were used in conveying the findings to show that it is genuine and furthermore enables the reader to be transported to the research setting.
3. ***Negative or discrepant information included***; where information that contradicts the general perspectives of the themes is also included in the discussion of findings.

In quantitative methods, reliability implies consistency. In the case of quantitative reliability, it is the degree to which an instrument produce consistent results for same individuals at different times (Field, 2009). Reliability is concerned with the robustness of the questionnaire, and in particular whether or not it will produce consistent findings at different times and under different conditions, such as with different samples (Saunders et al, 2009). In order to determine the ability of a data collection tool in producing consistent results, reliability test is conducted on the questionnaire for this research. Bryman and Bell (2007) highlighted the 3 common methods in measuring the reliability of a research instrument, as follows:

a. Stability (test-retest method)
b. Inter-observer consistency
c. Internal reliability (Cronbach's alpha)

The stability test for reliability (***test-retest method***) requires the same questionnaire instrument to be administered twice to the respondents, and data from each time it is administered were then correlated in order to determine the reliability of the instrument. However, this method has some criticism in which the time interval can influence the likelihood that the respondents will answer in the same manner, thus going against the purpose of stability test (Saunders et al, 2009; Bryman and Bell, 2007). Furthermore, it is a difficult task to get the same respondents to answer the same questionnaires. Therefore, this test was not chosen as the reliability test for the quantitative instrument in this research.

The second method available for reliability testing is ***inter-observer consistency***. Trochim (2006) noted that this test is necessary to determine whether two observers are being consistent in their observations. Bryman and Bell (2007) also noted that this test is crucial for studies with more than one observer which data collection requires highly subjective judgments that affects coding and categorizing of data in the analysis stage. As the author is the sole observer and researcher for this study, this test is then not applicable for quantitative reliability testing.

Cronbach's alpha is one of the most popular ways of measuring ***internal reliability*** (Yu, 2005). Cronbach's alpha determines the internal consistency or average correlation of items in a questionnaire to gauge its reliability and results in a value in between 0 which means no correlation, therefore no internal consistency; and 1.0 for perfect correlation, hence complete internal consistency (Saunders et al, 2009). The reliability test for the questionnaire in this research is conducted with the aid of SPSS 17.

Table 4.5: Reliability statistics results from SPSS 17

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of items
.860	.829	32

The Cronbach's alpha value obtained in SPSS 17 for the questionnaire in this research is 0.860 which implies the reliability of the questionnaire used, as shown in Table 4.5 above. Values of Cronbach's alpha between 0.7-0.8 are commonly accepted for indicating good realibility of an instrument (Field, 2009).The value 0.860 shows that the results produced from the analysis of this questionnaire are trustworthy, repeatable, dependable and reliable to

an acceptable extent.The following Figure 4.4 below shows the reliability test conducted with the aid of SPSS 17.

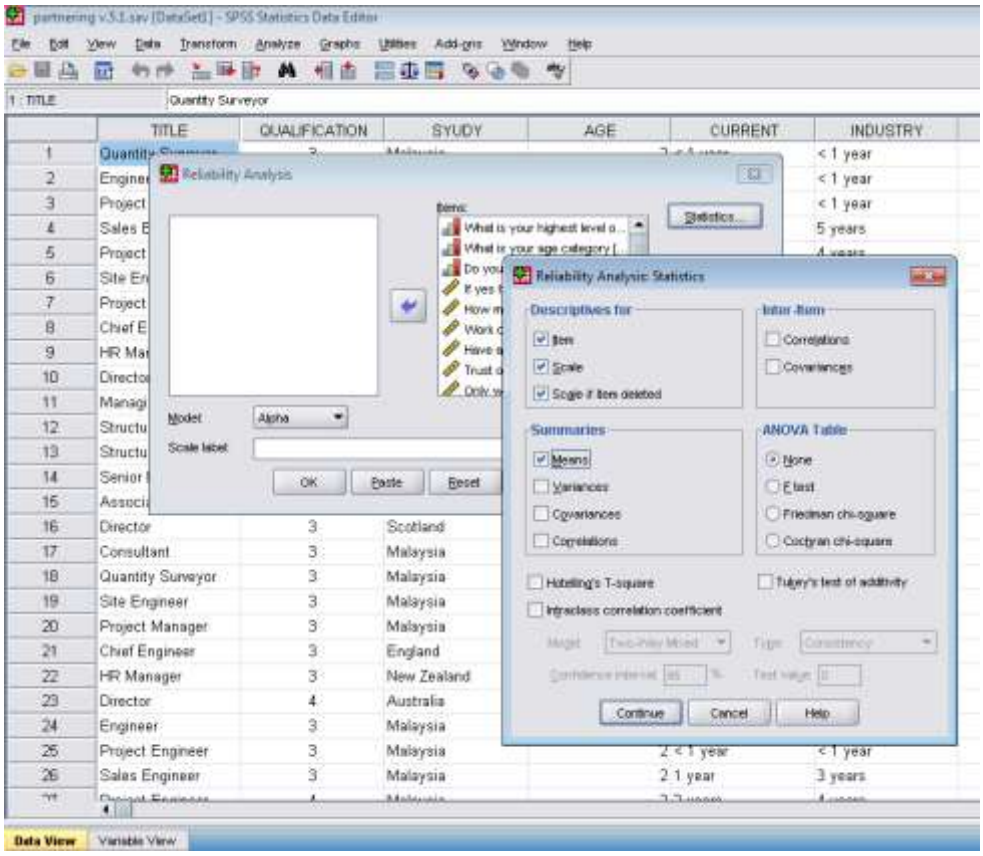


Figure 4.4: Screen shot of reliability test from SPSS 17

Throughout the data collection and analysis stage of this research, reliability and validity is given careful consideration, reflecting in the application of multiple sources of data and methods. In addressing the validity for a quantitative instrument, various methods exists which includes; ***content validity***, ***construct validity*** and ***criterion validity*** (Babbie, 2008; Saunders et al, 2009; Creswell and Plano Clark, 2011).

Content validity is established through the judgment of the external experts whether the items or questions are representative of the construct investigated (Creswell and Plano Clark, 2011). In this study, the questionnaire is developed by including enabling factors of partnering. These enabling factors were identified from various empirical researches in current partnering literature, and were not invented by the researcher, therefore deeming these enabling factors valid for testing. To ensure that the questionnaire instrument generated in this research measures what it is supposed to, the questionnaires have been reviewed by a

panel comprising of 5 experts from various segments in the Malaysian construction industry prior to the data collection stage, to evaluate the content validity of the instrument. Experts were asked specifically to review each of the items according to (1) how the item represented the enabling factors in content, and (2) whether they think the Likert scale assigned was applicable to each item in meaning.

According to Dong (2011), a common way to evaluate content validity is to analyse the content of a test and to compare it with a statement of what the content should be. During the content validation process, the reviewers were given a fact sheet in which the description of all the enabling factors (also shown in Table 7.1 in Chapter 7) and were asked if the items in the questionnaire reflected the description of the enabling factors in meaning. The comments and concerns raised by this panel of experts during this review process have been acknowledged and incorporated to improve the questionnaire instrument for use in data collection stage. Apart from that, the review process have also resulted in the Likert scale applied being varied according to the meaning of each item; whether the item implied action or opinion of the respondent's organization. Cavana et al (2001) and Miller (2012) have suggested that for an instrument to be valid it has to be reliable but must also measure what it is intended to measure. Considering that the instrument used in this research has scored a satisfactory reliability measure of Cronbach $\alpha = 0.860$ and have gone through the process of experts review, the questionnaire used in this research can be regarded as a valid instrument.

Revisiting the nested methodological research model (Kagiouglou et al, 2000) mentioned at the beginning of this chapter, the following Figure 4.5 illustrate the selection of research philosophies, research approach and research techniques made in this research through justifications discussed in their respective sections.

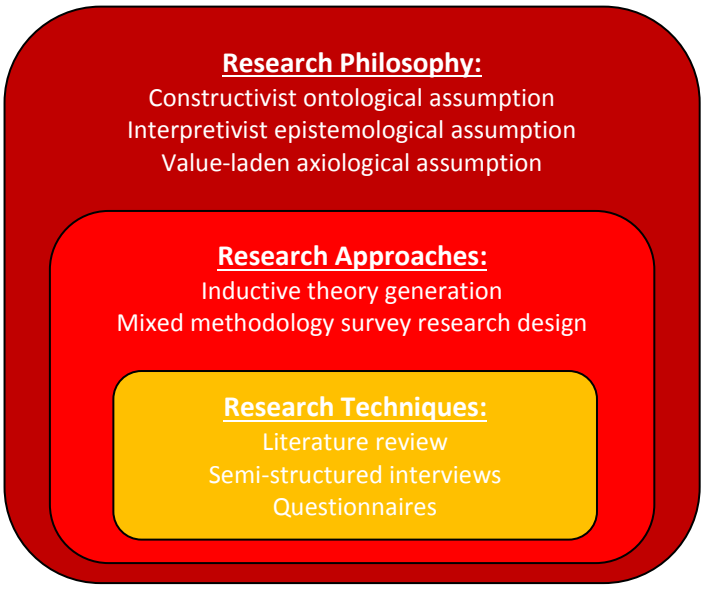


Figure 4.5: Research process model (adapted from Kagioglou et al, 2000)

The selection of each philosophical standpoint has streamlined the researcher's understanding for the suitable research approach and the research questions established earlier on in Chapter 1 has indicated the methodological design to be adapted in this research. Based on the research design selected, appropriate research techniques are selected to enable the researcher in exploring the level of engagement in partnering activities among private SME consultant firms in Malaysian construction industry, and the organizational culture which influenced their adaptation of partnering; as well as exploring the general insights of the industry in the matters of partnering and type of organizational cultures. The data obtained from both qualitative and quantitative methods will assist the researcher to arrive at a more comprehensive perception of the current situation in Malaysian construction industry, and enrich the fundamentals for which the framework of partnering will be built upon. The next section shall summarize the considerations and decisions made on methodologies for this research as discussed throughout this chapter.

4.9 SUMMARY

This chapter has pondered upon the philosophical standpoints which are available in theories of knowledge. In order to determine the most appropriate philosophical positions, careful considerations must be made based on the nature of the problem and the research questions established. With regard to philosophical positions, this research undertakes the the

ontological assumption that reality is continuously constructed by the social actors (constructivism), and the epistemological assumption that knowledge should be gathered through scrutinizing the views of the social actors;which are in this context, the practitioners of the Malaysian construction industry. The interpretivist epistemological stance suggest in depth investigation of the main data, which is commonly done through qualitative methods which will yield a rich and specific understanding of the research matter hence indicating that this research is value-laden. However in order to capture the general opinion of the practitioners in the Malaysian construction industry as well as the specific opinions from private SME consultant firms with regards to partnering, this research adopts a mixed methodology survey research design, which will make use both quantitative and qualitative methods in data collection. The use of dual method will enable the researcher to arrive at a more robust conclusion for this study. The later sections in this chapter have also discussed the selection of research techniques that are appropriate to answer the research questions in this study. Furthermore, the issue of reliability and validity in data collection are also deliberated and given thoughtful considerations, to ensure the methods employed in this study will yield quality and consistent results.

This chapter has provided an extensive description of the research methodology adopted in this study. The next chapter will report the findings gathered through qualitative methods during the data collection process, and the analysis conducted for the qualitative findings.

CHAPTER 5

QUALITATIVE DATA ANALYSIS

5.1 INTRODUCTION

This chapter shall elaborate in detail the qualitative data analysis undertaken for this research. Firstly, the method of data collection and surveyed sample shall be discussed. The use of Nvivo 10 in data analysis will also be highlighted, as well as the design for semi structured interviews which was carried out in the data collection phase. An in-depth discussion of the analysis is also included within this chapter. Finally the key findings from the data analysis are highlighted at the end of this chapter.

5.2 QUALITATIVE DATA COLLECTION – SEMI-STRUCTURED INTERVIEW

As previously mentioned in Chapter 4, the qualitative data collection will be conducted with the use of semi-structured interviews. The following sub-sections describe the aim of the interview, design of the interview process, the surveyed sample and the analysis method for qualitative data.

5.2.1 AIM OF THE INTERVIEW

As this research is exploratory in nature and keeping in line with the research questions and objectives, the main aim of the interview is to determine if the industry players understand the overall concept of partnering as described in partnering literatures. Apart from that the interview also seeks to know if the industry players are aware of partnering practices in the UK and whether they would consider it to work in Malaysia. Bearing in mind the role of culture in partnering as found in the literature review, the second half of the interview aims to determine the type of organizational culture and structure in Malaysian construction industry,

and seek to know if the current organizational culture is acting as an enabler or a barrier towards partnering in construction.

The interview process comprised a series of semi-structured questions of “what” and “how” questionsall delivered face-to-face in an inquiring manner to fully garner the potential of the semi-structured interview method in yielding rich and in-depth findings for this research. The semi-structured interview is essentially an interaction between the researcher and participant in which the researcher has a general plan of inquiry including the topics to be covered but not a set of questions that must be asked in a particular order and containing only the specified words (Babbie, 2008). Besides the potential of semi-structured interviews in yielding in-depth findings, the interactive nature of these interviews provide a relaxed atmosphere suitable for qualitative data collection, where the participants will be put at ease in having a conversation with the researcher rather than being distant in filling a survey (Woods, 2011). Due to these benefits, the semi-structured interview has been selected as the most suitable qualitative data collection method for this research which enables the researcher to gain the ‘proximity’ with the participants to fully understand the research context. During the semi-structured interview sessions, the researcher has made propositions from the participants comments where needed, to encourage the participant to fully engage in the interview process and further provide the basis for emerging themes for this research.

5.2.2 DESIGN OF THE INTERVIEW PROCESS

The data collection stage is designed to achieve some of the research objectives through the use of themes in categorizing all information received from the participants/respondents. Chapter 4 has listed the 4 themes established for the data collection in this research, and the same themes are applied in both methods for data collection. The interview sessions are conducted with the aid of a semi-structured interview schedule as attached in Appendix 1 of this thesis. In entirety, there are 5 sections within the interview schedule as follows:

a. Section I – Profile of participants

This section begins with a series of general questions, aimed at capturing the general information of the participant and their current organization. In this section, the researcher will note; the participants’ name, job title, age, education and qualification background,

number of years working in current organization as well as the date and venue of the interview for record purposes. Several questions regarding the organization where the participant is working at are also asked including the name of organization, the nature of business, whether or not the organization is a private firm or a public agency, and the number of years the organization has been established. The general information are important in profiling the participants included in the qualitative data collection, as well as for drawing conclusions should there be a difference of opinions among the participants. It should be mentioned that, although the name of participant and their organization are noted in the interview schedule, for the purpose of anonymity these names will not be published in the analysis and anywhere in this thesis, in order to fulfil the ethical requirement from the University.

b. Section II – Understanding of the partnering concept (Theme 1)

In this section, the participants were asked a series of questions in relation to their experience, understanding and previous involvement (if any) in a partnering relationship. This section primarily seeks to determine the participant's personal understanding of partnering and their recollection of the partnering process which they have been involved with. The participants were also asked of lessons learnt in their experience with partnering. The questions posed in this section will reveal if the participants have different perceptions with the term 'partnering' and the actual partnering process which they have experienced. In total there were 4 questions included in this section.

c. Section III – Awareness of partnering practices (Theme 2)

This section comprised of 5 questions aimed at investigating the awareness of the participants with regard to partnering practices in other countries, apart from their own experience in Malaysia. In this section, the partnering practices from the UK are chosen as point of comparison for partnering in Malaysia. The UK is chosen as the country of reference due to the experience of implementing PPP projects well over a decade (Naoum, 2003) and is a relevant comparison with the Malaysian context as the construction industry still applies British Standards in certain aspects of design and

construction (Abdul Rashid, 2009). 3 questions are asked to determine the participant's awareness and feelings regarding UK partnering practices, as well as the perception of similarities between UK and Malaysian partnering practices. The remaining 2 questions are targeted at the opinions of the participants on whether the partnering practices would work in Malaysia, and what can be done to enable the implementation of partnering in Malaysia.

d. Section IV – Organizational culture and structure in Malaysian construction industry (Theme 3)

Section IV of the interview schedule is geared at identifying the organizational culture and structure of private SME consultant firms in the Malaysian construction industry. There are 5 questions in total within this section, with 3 questions for the firm's organizational culture and 2 questions for investigating the structure of the firm. The participants are asked to describe the organizational culture and structure as they experienced it; the environment, deliverables, standard practices and rewards which reflect the organizational culture, and the strength of this culture throughout their firm. The type of culture is also reviewed by the participants with regards to 2 dimensions; the stability and focus of the firm according to the Competing Values Framework which was highlighted in Chapter 3 of this thesis. The organizational structure of the firm are also investigated in this section, as organizational structure and culture of firm are interconnected (Handy, 1985; Schein, 1986) and can be reflected in the firm's policies and relationship with other parties.

e. Section V – Role of organizational culture in partnering (Theme 4)

The final section of the interview schedule is designed to determine if the participants feel that their current organizational culture is acting as enabler or barrier towards partnering. This section contains 2 questions which records the opinions of the participants in; the matters of organizational culture affecting partnering in a positive manner and the improvements to be made for their current organizational culture so partnering has higher chance of succeeding. The same questions are also included as open-ended questions in

the questionnaire surveys, so the researcher could compare the findings in both methods and draw a collective conclusion for this research.

5.2.3 SURVEYED SAMPLE

The Construction Industry Development Board (CIDB) Malaysia, in collaboration with various organizations representing the construction industry has developed the Construction Industry Master Plan (CIMP) which identified and recommended measures to address the current problems and challenges faced by the industry (CIDB, 2009). Among of the recommendations was to implement partnering as a measure to improve the industry's innovativeness. Designer firms were chosen as the main sample in this research due to their capable position in introducing innovation in the construction industry, consistent with the findings from Ling (2003) and Panuwatwanich et al (2008); which highlights the role of designer and consultants in innovation. This made the views of consultants in engineering design firms critical in answering the research question of understanding how partnering can improve innovations in the construction industry. In total 14 participants in 4 consultants engineering firms (civil and structural consultants) were interviewed. These participants are varying in their level of management and experience, and the firms were located in different region in Malaysia; with 2 located in the capital of Malaysia, Kuala Lumpur and the remaining located in the northern region of Malaysia.

The main criteria for the firms selected in this research are as follows; the firms are actively involved in the industry and have been established for more than 10 years. It is important that the firms have been active and has had more than a decade of experience as they would have experienced how policies set by the government or trends in the current construction industry affected their business and changed how they manage their projects. All of the firms included in this research are categorized as small and medium sized enterprises (SMEs) having less than 50 employees and their nature of business are mainly civil and structural design. SMEs are at the core of Malaysian construction industry and account for about 90% of companies undertaking construction work in the country (Kamal and Flanagan, 2012).

For the purpose of anonymity and keeping in line with the ethical approval requirement, the participantshall be labelled P1, P2, P3 and so on, without any order of importance, as with the

name of the firm; F1, F2, F3 and F4. The following Table 5.1 shows the details of the sample interviewed for this research.

Table 5.1: Detail of sample for interview

Organization	No of participants	Participant labels	Managerial Level
F1	1	P6	Director / Principal
	4	P2 P8 P10 P11	Senior Engineer / Middle Manager
F2	1	P7	Director / Principal
	1	P4	Senior Engineer / Middle Manager
F3	1	P5	Director / Principal
	4	P1 P3 P13 P14	Senior Engineer / Middle Manager
F4	1	P12	Director / Principal
	1	P9	Senior Engineer / Middle Manager

With reference to Table 5.1 above, the participants interviewed in this research are in the top or middle manager position. This is due to the fact that these 2 groups are commonly involved in decision making in the construction industry. The views of top and middle management are important to this research, as they will be the key person working in a partnering project and will have the authority to decide on behalf of their firm.

At the data collection stage, the researcher has experienced some difficulties in conveying the main concepts of partnering to the participants. This could be due to the participants were unable to relate to the terminologies used which were technical in nature and content specific to partnering. Another reason would be the linguistic limitations of the participants themselves, as the interview guide and questions were prepared in English. The researcher had then resolved this problem by providing a translated version of the interview guide to the participants. However, the limitations in the participants' linguistic skill had also resulted in the researcher having to interview the participants in English and Malay alternatively during the interview sessions. Consequently, the transcripts of the interviews are also done intermittently in English and Malay. The complete process of translating and transcribing the interview transcripts in English had also taken much longer than initially anticipated.

5.2.4 CONTENT ANALYSIS

The qualitative data obtained from the interviews in this research is analysed using content analysis method. The aim of content analysis is to achieve a condensed and broad description of the phenomenon, and the outcome of the analysis is concepts or categories describing the phenomenon. According to Elo and Kyngas (2008), the purpose of the concepts or categories is to build up a model, framework, conceptual map or categories. Content analysis is a method of analysis that can be done deductively or inductively, based on the purpose of the research. As previously highlighted in Chapter 2 and Chapter 4, the knowledge surrounding partnering is fragmented at present due to it's the method's infancy in the Malaysian construction industry, the inductive content analysis is used in analysing the qualitative data obtained in this research, as recommended by Lauri and Kyngas (2005). Besides that, Green and Thorogood (2004) also suggested that exploratory research (such as this research) benefits from simple reporting of common issues mentioned in data resulting from content analysis.

In this analysis, the categories for coding are derived from the data itself. The process begins with organizing the qualitative data, which involves open coding, creating categories and abstraction (Elo and Kyngas, 2008; Vaismoradi et. al., 2013). The stages involved in inductive content analysis conducted in this research are as follows:

- ***Open coding*** – Notes and headings are written in the interview transcripts while reading. The transcript is read through again, and as many headings as necessary are written down in the margins to describe all aspects of the content. Headings are collected from the margins to form categories for the next stage. This stage of analysis is done manually on paper.
- ***Categorization*** – Categories are grouped under higher order headings. In thisresearch the categories are organized according to the questions in the interview schedule. The aim of this stage is to reduce the number of categories by removing the categories which are similar and grouping them for further analysis. This stage of analysis is done electronically, with the aid of Nvivo 10 software.
- ***Abstraction*** – formulating a general description of the research topic through generating categories, where each category is named using content-characteristic

words. This process yields the most concise categories for the data, which is used in describing the findings for this research.

5.2.5 APPLICATION OF NVIVO 10 IN DATA ANALYSIS

To simplify and organize the qualitative data analysis, Nvivo 10 software is used to code the data from the interview transcripts into the nodes in the software with the process of content analysis. The following Figure 5.1 portrays the screen shot of the use of Nvivo 10 for content analysis in this research.

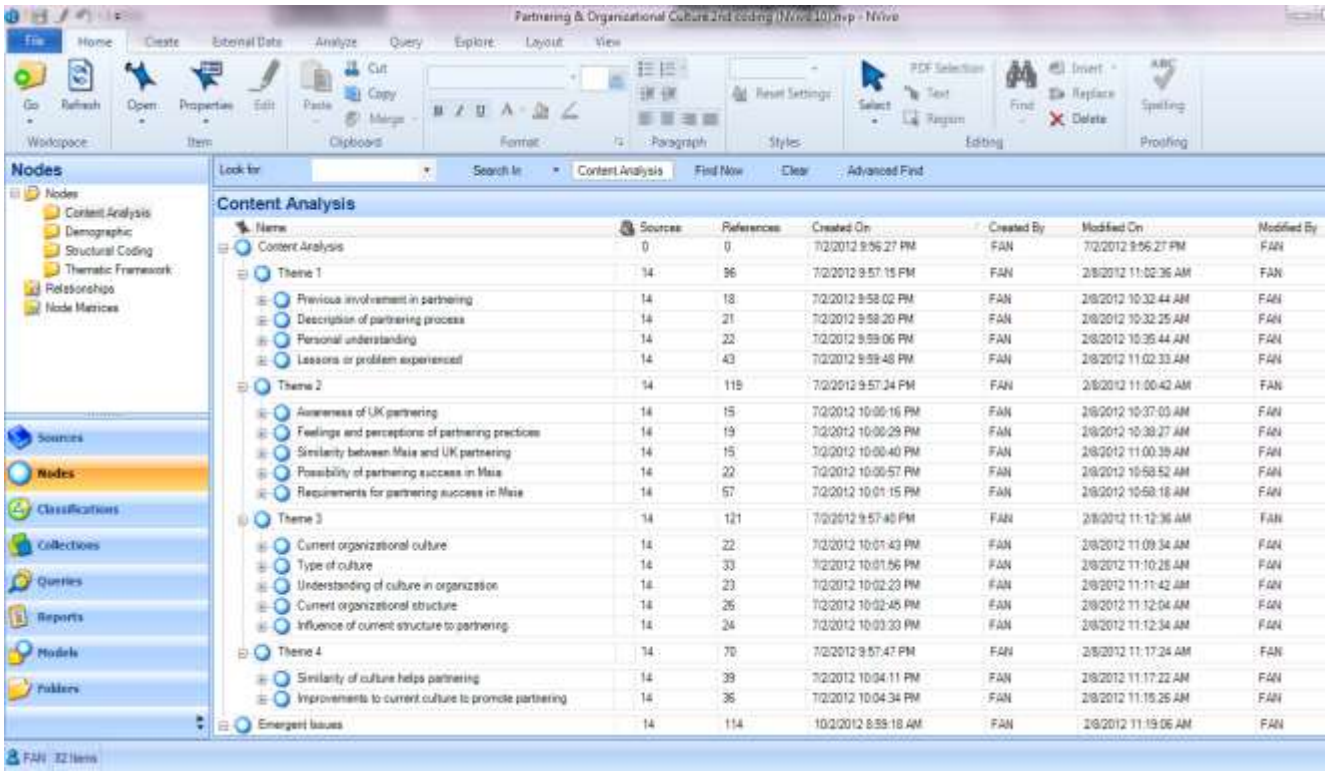


Figure 5.1: Screen shot for content analysis in Nvivo 10

Prior to the analysis stage, member checking was conducted on all of the interviews and the participants verified the accuracy of the interview transcripts. Reliability and validity measures have been taken to ensure the quality of analysis conducted for the interview data, as described in Chapter 4. The use of Nvivo 10 software enables the researcher to simplify the tedious process of content analysis, by displaying the number of responses coded at each node. From this stage, the researcher was able to determine the pattern which existed in the data to draw conclusions on.

5.3 FINDINGS

This section describes the main findings developed from the interviews conducted and the qualitative analysis employed to the data. As previously mentioned in Chapter 4 of this thesis, all qualitative data were analysed through the method of content analysis. This process is done with the aid of Nvivo 10 software. The software enables the researcher to display the coded results and the frequencies in that they occur within the data. The interview data has been recorded using a handheld voice recorder and transcribed in Microsoft Word. Then, these data are organized according to each theme as planned in the interview schedule. A coding scheme is derived from the participants' own responses to each interview questions. This coding scheme is then applied to the data and all responses related to the codes are housed in parent nodes in Nvivo 10. The frequency in which the data appears in each code is recorded, and the analysis is conducted based on this information.

The following Figures 5.2 – 5.6 display the sources and references for the nodes analysed in this research. The nodes, sources and references are labelled and briefly explained in the colour boxes with arrows. The Nvivo 10 software counts the references based on the coding done by the researcher (QSR, 2012). For example, if the same content is coded at two different nodes, the coded content is counted as two references. In the software, users are able to see the total number of references without counting the coding in different nodes by using filter commands.

In this thesis, the number of references displayed on the print screen images is shown according to the number of times the content is coded. Therefore in the figures (Figure 5.2 - 5.6) and tables (Table 5.2 - 5.22) throughout the qualitative analysis in this thesis, the numbers may or may not appear to add up in total. The results pertaining to each theme in the interview are explained in detail in the following section.

5.3.1 UNDERSTANDING OF THE PARTNERING CONCEPT

The first theme in the interview determines the understanding of partnering among the participants which are from sample described in previous section. Figure 5.2 below illustrates the screenshot of Nvivo 10 showing the nodes on understanding of partnering concept:

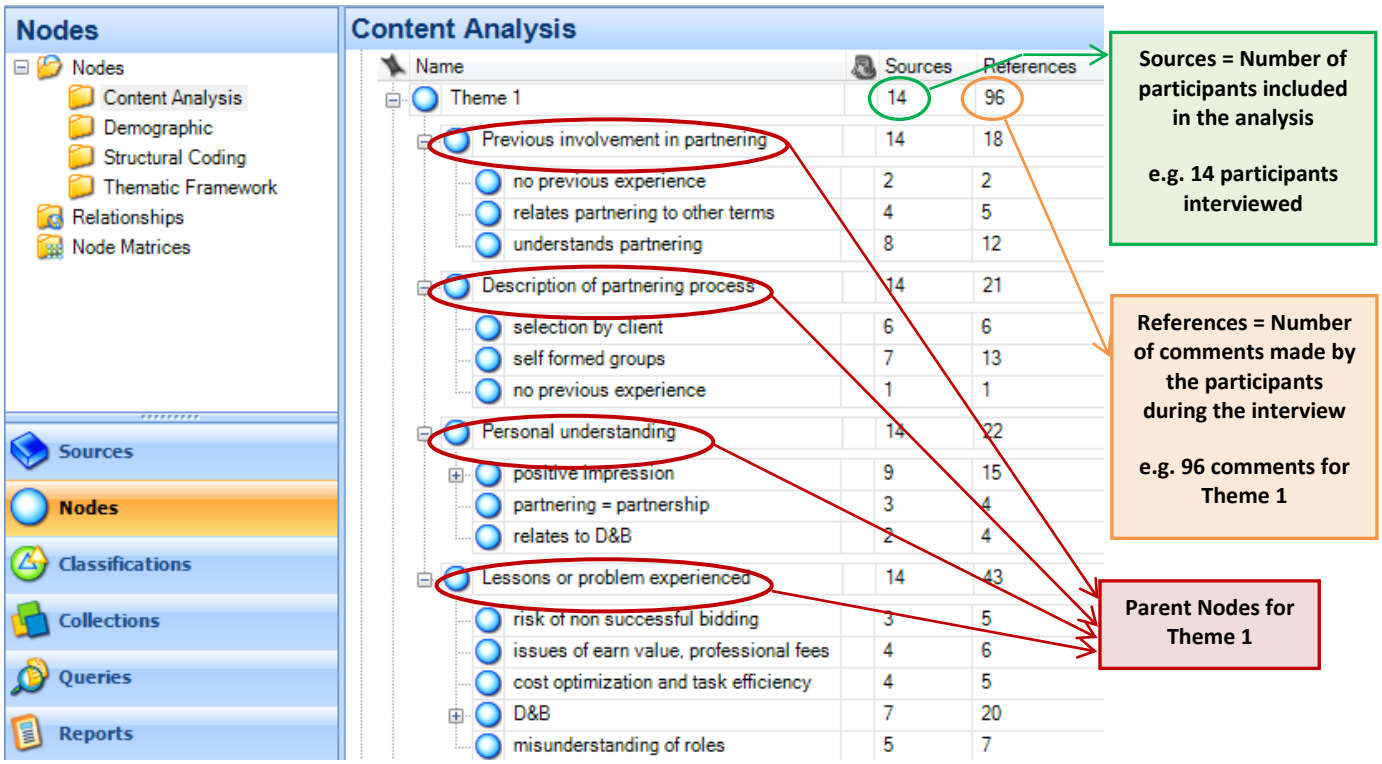


Figure 5.2: Screen shot of Nvivo 10 showing the nodes on understanding of partnering concept

There are 4 questions under this theme, which main idea is to explore the actual understanding of the participantsand to compare with the researcher's understanding of partnering gained from the literature review.The analyses done in this research are focused on the following;

a. Previous involvement in partnering for the participants
b. The participant's description of a partnering process
c. Their personal understanding of partnering
d. The lessons or problem experienced in partnering

The previous Figure 5.2 and the following Table 5.2 indicate the responses for theme 1. No of sources indicate the number of participants being interviewed and the no of references show the total comments or responses given by them during the interview (as shown in

Figure 2). These comments are placed in child nodes which labels are derived from the answer given by the participants, hence the process of content analysis. Table 5.2 below further summarizes the understanding of partnering node.

Table 5.2: Summary of Theme 1 parent nodes

Parent Nodes: Theme 1		No of Sources	No of References
Understanding of partnering		**14**	**96**
1	Previous involvement in partnering	14	18
2	Description of partnering process	14	21
3	Personal understanding of partnering	14	22
4	Lessons/problem experienced	14	43

For the first parent node (Previous involvement in partnering), the researcher seeks to determine the previous involvement of the participants in partnering activities. Only 2 out of the 14 participants had no previous experience in partnering while the remaining 12 has somewhat an idea of partnering. It should be mentioned however, 2 of the participant had initially thought of partnering as partnerships, which relates to shares and ownership of a company, rather than a collaborative activity among multi-disciplinary parties in a construction project. 3 of the participants relate partnering to design and build projects when relating to the collaborative aspect of partnering. The remaining participants have responded to having been involved in partnering before this. The participants that have experienced partnering also implied that most of partnering activity that they undergone is conducted informally, as described by P4, **"*We have that in practice here. Just that we don't have it in a black and white understanding*"**and P2, **"*I think we are already doing that. But informally.*"**The findings for this node can be simplified in the following Table 5.3.

Table 5.3: Summary of previous involvement in partnering node (1st parent node – Theme 1)

Previous involvement in partnering		No of Sources	No of References
Child nodes		**14**	**18**
A	No previous experience	2	2
B	Relates partnering to other terms	4	5
C	Understands partnering	8	12

For the second parent node (Description of partnering process), the participants are asked to describe the partnering process as they have experienced it. 6 out of 14 participants describe the partnering process as similar to a design and build process. Overall, these participants

indicate that the parties coming together in a project are selected by the client, or the contractor which is acting on behalf of the client. For example, P7 mentioned that ***"..we are under an organisation which are appointed by the contractor... the contractor appointed all of the consultants including us..",*** and also mentioned by P6, ***"…depending on the team that been appointed by the new client."*** 3 out of 14 participants admit that they were in self-formed group of firms which went into the bidding process together, and understood that they may or may not be successful when they bid for the project. P9 response of ***"…it could be partnering, they already set up..but not full team. Initially there were only 2-3 parties involved..as it progresses there were more who joins in"***and ***"…basically, the story is XYZ has an idea, they saw the need and then they proposed to the LLM"*** gave the researcher the impression that to some degree, partnering has been applied in Malaysian construction industry. Table 5.4 below summarizes the findings for this node.

Table 5.4: Summary of description of partnering process node (2nd parent node – Theme 1)

Description of partnering process		No of Sources	No of References
Child nodes		**14**	**21**
A	No previous experience	1	1
B	Selection by client	6	6
C	Self-formed groups	3	5

The participants are next asked of their personal understanding of partnering, which is analyzed in the third parent node (Personal understanding of partnering). There are 22 responses for this node, indicating their personal understanding of partnering process which can be summarized in the following Table 5.5.

Table 5.5: Summary of personal understanding of partnering node (3rd parent node – Theme 1)

Personal understanding of partnering		No of Sources	No of References
Child nodes		**14**	**22**
A	Relates to D&B	2	4
B	Positive impression	9	15
C	Partnering = Partnership	3	4

In general, most of the participants (9 out of 14) agree that partnering has positive impacts on the industry. There are 11 references from 6 sources that imply partnering brings benefits in the forms of sharing of expertise, knowledge and technology; enhances quality and minimizes error in the construction process. P10 and P5 respectively commented; ***"We could***

also possibly detect the problems at the very beginning, so we can plan in advance what solutions that we may need. The way we do it now, when the problem happen, then only sit together and try to solve it. So this could be a good thing.", ***"It's a good thing..because of the information, knowledge and technological exchange..",*** which indicates that generally the participants believe partnering is a positive move to improve and solve current problems in the Malaysian construction industry. However for the 2 participants who believe that partnering is similar to design and build projects, they have also somehow relate the negative aspects of design and build projects to partnering, as mentioned by P3, ***"It will become 2 separate groups..contractor in a group, consultant (designers) in another. We have to complete the work no matter what..otherwise we do not get paid.."***, as this comment clearly shown that the participant had expected that contractors play a prominent role in partnering projects just as in design and build. It could probably signify that the understanding of the industry towards partnering practices may not be accurate, which could be one of the reason why partnering is not widely practiced in the Malaysian construction industry.

The fourth parent node (Lessons/problem experienced) for Theme 1 seeks to identify what lessons or problems that the participant had encountered in partnering. Among the lessons and problems identified from the experience of the participants are:

i. Risk of non-successful bidding
ii. Issues of earn value and professional fees
iii. Cost optimization and task efficiency
iv. Authorities & monitoring
v. Payment issues
vi. Misunderstanding of roles among firms involved

Most of these findings are parallel to the issues found with the implementation of partnering as mentioned in the literature review. However it should be highlighted that a significant amount references are made (16 out of 43) on the problems faced with authorities and monitoring issues. In general, the participants agree that authorities play an important role in monitoring partnering efforts to ensure its success. They are also however some comments on how the authorities seem to be taking advantage on the project cost by including requests that were not included in the initial contract through means of variation order (V.O.) as indicated by P1 ***"…they take advantage to include it on the project cost. This happens a lot,***

especially for projects in remote areas." On the other end some participants implied the need of having the authorities as a monitoring body for the construction industry, as stated by P7 ***"The authorities have to be involved, monitoring the situation so that all specification is correctly complied…"*** There may seem to be a conflict of roles for the authorities as they are expected to monitor all partnering efforts but in the same time there are inherent issues present with the accountability and transparency of the authorities in their role as a monitoring body in the Malaysian construction industry. The results for this node can be summarized in table 5.6 below:

Table 5.6: Summary of lessons and problems in partnering node (4th parent node – Theme 1)

Lessons/problems in partnering		No of Sources	No of References
Child nodes		**14**	**43**
A	Risk of non-successful bidding	3	5
B	Issues of earn value and professional fees	4	6
C	Cost optimization and task efficiency	4	5
D	Authorities and monitoring	6	16
E	Payment issues	3	4
F	Misunderstanding of roles among firms	5	7

The next section will discuss the findings for nodes in Theme 2.

5.3.2 AWARENESS OF PARTNERING PRACTICES

Theme 2 of the interview seeks to identify whether or not the participants have an awareness of partnering practices other than what is happening in Malaysia. This theme is also important to explore the amount of information and knowledge that the participants have regarding partnering-related issues. There are5 questions included for this purpose, which in detail explores the following:

a. Awareness of UK partnering practices
b. Feelings and perceptions towards partnering practices
c. Similarity between Malaysian and UK partnering
d. Possibility of partnering practice in Malaysia
e. Requirements for partnering success in Malaysia

These 5 questions are analysed through 5 nodes in Nvivo 10. The following Figure 5.3 illustrates the screenshot for awareness of partnering practices nodes under Theme 2.

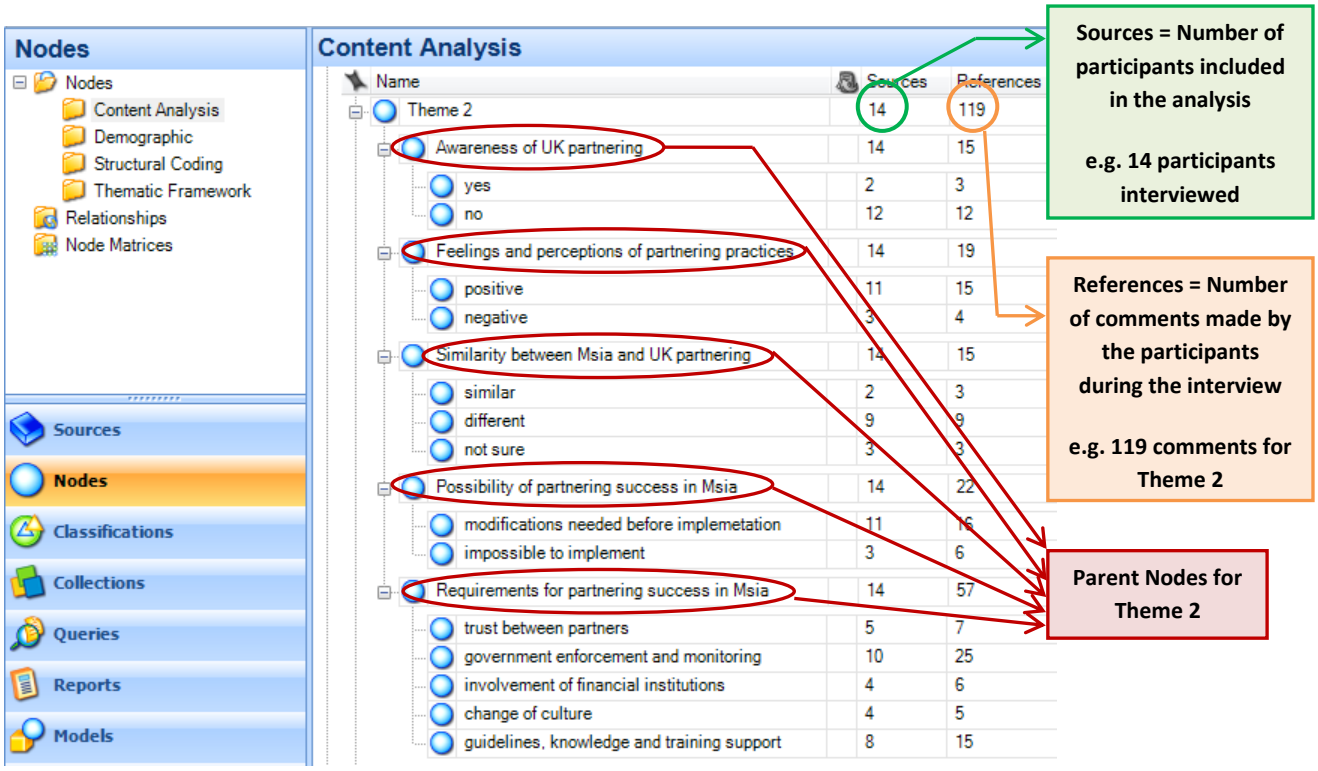


Figure 5.3: Screen shot of Nvivo 10 showing the nodes on awareness of partnering practices

The following Table 5.7 further summarizes the awareness of partnering practices node.

Table 5.7: Summary of Theme 2 parent nodes

Parent Nodes: Theme 2		No of Sources	No of References
Awareness of partnering practices		**14**	**119**
1	Awareness of UK partnering	14	15
2	Feelings and perceptions towards partnering	14	19
3	Similarity between Malaysia and UK partnering practices	14	15
4	Possibility of partnering success in Malaysia	14	22
5	Requirements for partnering success in Malaysia	14	57

The first parent node (Awareness of UK partnering) of Theme 2, attempts to determine the awareness of the participants towards partnering practices in other countries. Each of the participantswas asked whether or not they have heard of construction partnering that has been implemented in the UK and other countries. It was discovered that most of the participants (12 out of 14) have never heard of partnering being implemented in the UK, although they might have a general idea of what partnering should be. This could signify either one of two things; firstly, the authorities governing the Malaysian construction industry did not have an

effective channel to spread the current information about construction practices in other country, or secondly, the construction professionals in Malaysia have no interest in seeking new information unless it is required by the project. The comment made by P3, ***"There is no formal information given out by the government regarding it..sort of we just know because we are working in the industry..not really sure about partnering in the UK though..",*** followed by P13; ***"I don't think there is much information, more over the information is not really holistic. Not spread out. Maybe only a part of the industry is involved, who knows this thing…"*** and P4 ***"No, not really... I do understand the idea of partnering, though..the industry here might have been applying it for all that we know .."*** falls into the first category where the government is not seen as being very effective in giving out information for the industry. In cases where it is required to know, the construction professionals seem to be taking extra effort, as best portrayed by the response given by P9. ***"..it is not an entirely a new thing.. (other) people know about it. Just us (Malaysians) are exposed much later to it. Unless we travelled, or worked overseas..read more.. maybe we are more aware of such developments (chuckles). Another thing, unless there is a ministry who wants to do this, then only they will release the information required..."*.**The findings for this node can be summarized in the following Table 5.8.

Table 5.8: Summary of awareness of UK partnering nodes (1st parent node – Theme 2)

Awareness of UK partnering		No of Sources	No of References
Child nodes		**14**	**15**
A	Yes	2	3
B	No	12	12

Although it was highlighted in the previous node that most of the participants are not aware of UK partnering practices, in general most of them (11 out of 14) have positive impression on partnering practices and its promised benefits, as can be seen in the results for the second parent node (Feelings and perception towards partnering) for Theme 2. The comments given by P1, ***"It could be a good thing..it would mean that there is continuity of business for firms in the construction industry"*** and P8, ***"I think it is a positive thing... we might be able to improve the industry. Solve many problems that we currently have.. like sometimes we have disagreement with other companies, maybe because we don't understand each other..."***, followed by the comment given by P11 , ***"… this could mean our chances in***

which we can get in the future, partnering will increase our chance of survival within the industry" reflect this finding. The findings for this node are shown in Table 5.9 below.

Table 5.9: Summary of feelings and perceptions towards partnering nodes (2nd parent node – Theme 2)

Feelings and perceptions towards partnering		No of Sources	No of References
Child nodes		**14**	**19**
A	Positive	11	15
B	Negative	3	4

There appears to be some reservation towards partnering among the participants (3 out of 14), which are reflected in the comments from P7, ***"there is still a lot to be understood... like D&B, there is still a lot of things we have to understand. How can we move towards partnering, if this is the case?"***This response gave the researcher the impression that the participant appears to be hesitant towards partnering not because it is not a beneficial move, but more dominantly because there isn't much knowledge about it in the industry, based on their experience when something new is implemented in the industry.

The participants are then asked of the similarity between Malaysian and UK partnering practices, which findings are analysed in the third parent node of Theme 2. Mainly, 9 out of 14 participants believe that the practices would be different, factoring in cultural aspects; as mentioned by P5 ***"they have been doing it for some time, while we are just beginning to adapt to it.. there has to be some amount of adjustment before we fully implement it.."***and partnering experience among the industry players, which was implied by P8, ***"Malaysians do not share the same mentality like the British. Developing countries and developed countries possess different mentality...I think our way of partnering would have to be different, it is just the way our culture is.."*** and P12, ***"No I think it should be suited to our needs in the Malaysian industry. The basic concept should be similar, but there should be adjustments as to what serve the best interest to outcountry."***The importance of culture in partnering is highlighted in the literature review, and this statement by P8 also confirms the understanding of the researcher that there is some level of cultural influence in ensuring partnering success. The results for this node can be simplified in the following Table 5.10.

Table 5.10: Summary of feelings and perceptions towards partnering nodes (3rd parent node – Theme 2)

Similarity between Malaysia and UK partnering		No of Sources	No of References
Child nodes		**14**	**15**
A	Different	9	9
B	Not sure	3	3
C	Similar	2	3

In the fourth parent node for Theme 2, the analysis is focused on investigating the possibility of partnering success in Malaysian construction industry. While the participants are positive about the possibility of partnering success in Malaysia, most of them (11 out of 14) highlight the need of some adjustments to the industry prior to the implementation of partnering, as commented by P10, ***"If we adapt totally without reviewing our own industry, we might find that their policies are not suitable to be adopted in Malaysia. Maybe we can adapt some of the generic partnering practices, not entirely"*** and reflected by P11, ***"if we were to implement these things, what are the benefits that we can get. From our study, then we can determine if we need to modify certain things before we implement…"*** This shows that there is need to study the suitability of other partnering practices in the Malaysian context and further confirms the need for this research. However the researcher feels the need to highlight the pessimistic opinions of some of the participant in thinking that partnering is quite impossible to implement in Malaysia; as mentioned by P1, ***"The problem with here in Malaysia is even though all is stated in the contract, in the BQ, but the implementations were done halfway, same thing with enforcement",*** and P3, ***"The issue of trust, and cost. We might be better off in Malaysia doing things the usual way... rather than the (partnering) practice in the UK"***. These responses reflect the problem of authorities and monitoring, the issue of trust among construction parties and cost, which is a known problem in Malaysian construction industry (CIDB, 2009). The results for the fourth parent node for Theme 2 can be summarized in the following Table 5.11.

Table 5.11: Summary of possibility of partnering success in Malaysia nodes (4th parent node – Theme 2)

Possibility of partnering success in Malaysia		No of Sources	No of References
Child nodes		**14**	**22**
A	Impossible to implement	3	6
B	Modifications needed before implementation	11	16

The fifth parent node of Theme 2 explores the requirement for partnering success in Malaysia. The issue with authorities and monitoring is a critical issue in nature, as it is

repeatedly being mentioned to be one of the most important requirements to enable partnering success in Malaysia. 10 out of 14 participants feels that the government should play an important role in promoting, enforcing and monitoring partnering efforts within the industry, as reflected by P2***, "..we need the government to monitor the efforts. In terms of implementation, to make sure everything is done to certain standards…"*** The results for the fifth node in theme 2 are simplified in Table 5.12 below.

Table 5.12: Summary of requirement for partnering success nodes (5th parent node – Theme 2)

Requirement for partnering success		No of Sources	No of References
Child nodes		**14**	**57**
A	Change of culture	4	5
B	Government enforcement and monitoring	10	25
C	Guidelines, knowledge and training support	8	15
D	Involvement of financial institutions	4	6
E	Trust between partners	5	7

Another important requirement as viewed by the participants is the need for a proper guideline for partnering efforts, and an improved channel of knowledge and training from the government. The dependency on the government as the source of knowledge and enforcement are probably due to the fact that the government is indeed the single largest client in the Malaysian construction industry (CIDB,2009), which can be seen in the response of P8, ***"The government will have to monitor all partnering efforts, then perhaps it has a better chance to be successful. Normally the government is the client, but as usual, there is a lot of bureaucracy in the government..."*** Interestingly 2 of the participants mentioned about the link between government and political stance, as the main reason for government agencies not performing effectively. When asked of the need for new monitoring agency for partnering, P12 responded saying ***"No… we have already got the agencies for monitoring and supervision in Malaysia. However, after they (the government) established the agencies, they don't really run it as it should be… sometimes I think the agencies are established just so some small time politician can be the chairman of the agency.."*** This opinion is also extended similarly by P14 in his comment; ***"The policy makers do not understand the workings of our industry. They tried, but they cannot understand it. Even if engineers become the ministers, he would not be talking on behalf of the engineers… he is already a politician. This is where the problem starts."***

In general, the results shown that there are 5 basic requirements for partnering in Malaysia which are as follows, in the order of importance based on the findings:

i. Government enforcement and monitoring
ii. Guidelines, knowledge and training support
iii. Trust between partners
iv. Change of culture
v. Involvement of financial institutions

It should be noted that the issue of culture is again being mentioned as one of the important aspects for partnering success. This further confirms the direction of this study, and the need to critically examine how culture affects partnering. The remaining 2 themes (theme 3 and 4) are aimed at determining the role of culture in partnering success within Malaysian construction industry and the results to these themes shall be discussed in detail in the following section.

5.3.3 ORGANIZATIONAL CULTURE AND ORGANIZATIONAL STRUCTURE IN DESIGN FIRMS

Theme 3 for the interview seeks to determine the organizational culture and organizational structure in the design firms in Malaysian construction industry. The analysis for theme 3 shall focus on the following issues:

a. Current organizational culture
b. Type of current organizational culture
c. The understanding of culture within the organization
d. Current organizational structure
e. The influence of current structure towards partnering

The following Figure 5.4 illustrates the nodes on organizational culture and structure in designer firms.

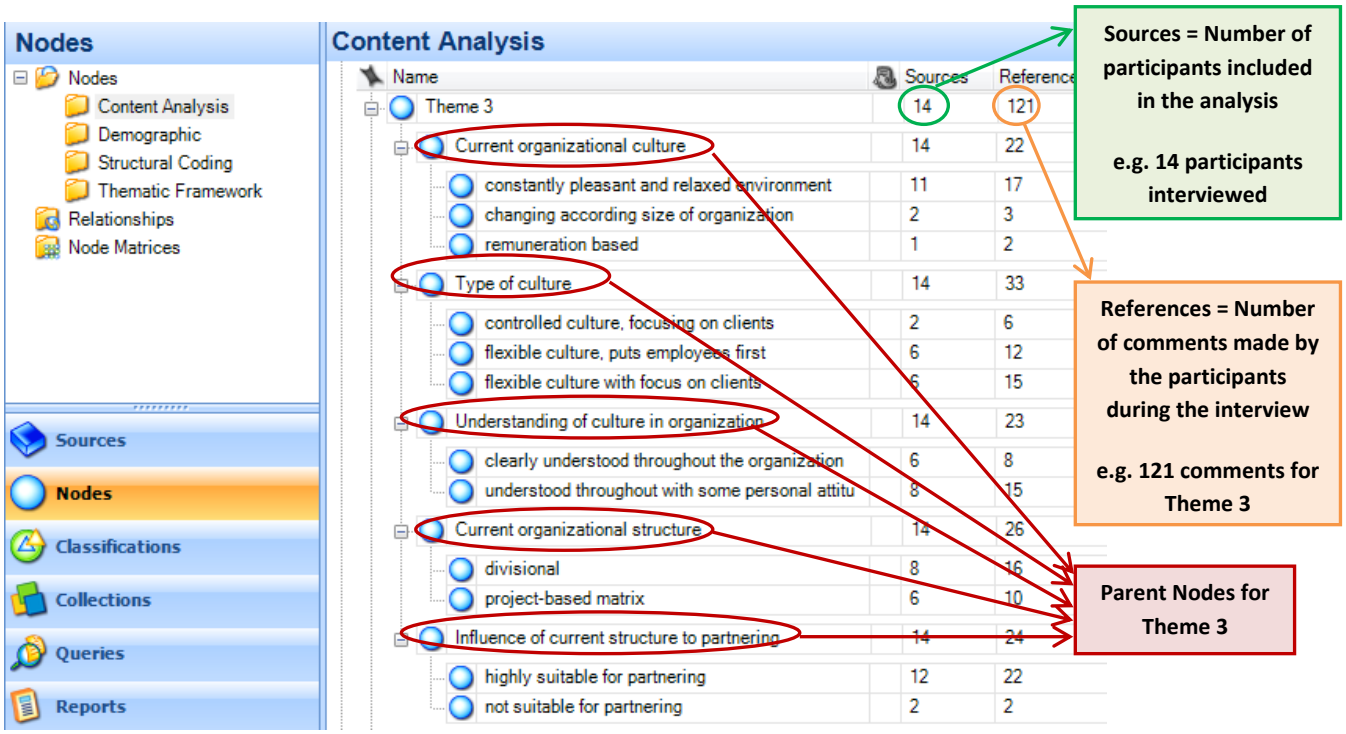


Figure 5.4: Screen shot of Nvivo 10 showing the nodes on organizational culture and structure in consultant firms

Table 5.13 below summarizes Theme 3 parent nodes:

Table 5.13: Summary of Theme 3 parent nodes

Parent Nodes: Theme 3		No of Sources	No of References
Organizational culture and structure in design firms		**14**	**121**
1	Current organizational culture	14	22
2	Type of current organizational culture	14	33
3	Understanding of culture in organization	14	23
4	Current organizational structure	14	26
5	Influence of current structure towards partnering	14	24

The first parent node (Current organizational culture) of Theme 3 was to determine the current organizational culture of the designer firms in Malaysia. Based on the results, in general the work environment of designer firms can be described as constantly pleasant and relaxed. There seems to be no difference between the responses of the participants who are top management (directors/principals) and the technical professionals (middle managers/senior engineers), both groups of participants seems to be in agreement that the culture in designer firms are flexible. The main concern is that the employees are able to complete their task within the due date, and they are given the flexibility of working hours. This can be seen in the responses of P5 who is the principal in his firm, ***"I ask them to work***

overtime, no problems with all the staff. But when it comes to arriving at the office on time, most of them couldn't come on time. So, we have got to consider, sometimes they are more on one aspect, less on the other..." and P4, a senior engineer in his firm, ***"As long as you deliver, it is ok. We don't have punch card system, just a record of time in and out. Sometimes we do ask the staff to stay back to reach the deadlines".*** P11 also responded positively to this issue by saying ***"… we are given the freedom in selecting the best way to do the job. So farm with what we are doing… the freedom that we are allowed in planning our tasks, we have no problems. Everyone is able to deliver."*** The results for the first node of Theme 3 can be summarized in Table 5.14 below.

Table 5.14: Summary of current organizational culture nodes (1st parent node – Theme 3)

Current organizational culture		No of Sources	No of References
Child nodes		**14**	**22**
A	Constantly pleasant and relaxed environment	11	17
B	Changing according to size of organization	2	3
C	Remuneration based	1	2

In general it can be said that most of the participants (12 out of 14) are in agreement that their firm practices flexibility in their day-to-day activities. However, the focus of the firm varies equally between employee driven and client focused, based on the responses given by the participants. The employee driven culture is reflected through the availability of training opportunities, benefits for employees, staff development programs and motivational support from the management while client focused culture reflects how decisions within the firm are made according to the needs of the client. The results for the second node can be seen in the following table 5.15.

Table 5.15: Summary for type of organizational culture nodes (2nd parent node – Theme 3)

Type of organizational culture		No of Sources	No of References
Child nodes		**14**	**33**
A	Controlled culture, focusing on clients	2	6
B	Flexible culture, puts employees first	6	12
C	Flexible culture with focus on clients	6	15

In the next node of analysis, third parent node (Understanding culture in organization), the researcher seeks to determine whether or not the flexible culture is commonly understood throughout the entire organization. In general all of the participants agree that their flexible culture is understood, which could be attributed to the size of organizations in this study that

are classified as SMEs with total number of employees being less than 50. However there are some isolated cases in their organization where the employee does not uphold to their culture, as reflected by several participants (8 out of 14). In these cases there is a general acceptance by all of the participants that the non-technical administrative staff are less appreciative of their flexible culture, as mentioned by P3, "***Maybe they do..it's just their attitude themselves"*** and P5, who is the principal in his firm, ***"My technical staff...they know they have to finish by due date, the drawing must be submitted. The administrative staff may not realize this, the deadline. They just do not understand."***P14, who is a senior engineer in his firm, related that although the culture is accepted by all within the firm, there are some areas that needs constant reminding. This can be seen in his comments on the issue, ***"Some areas (of the organization) need wake up calls. For them to get better understanding on their work in terms of basic understanding of their role."***

It should be highlighted that most of the administrative staff in designer firms in Malaysia have relatively low levels of education as compared to their technical colleagues, which could be the reason that they possess lower work ethic values. This finding is parallel to the findings by Heller (1995) which implied that people having high *levels of education* and skill and occupying jobs with a fair measure of autonomy are very likely to hold high *work ethic* values. The results for this node can be simplified in table 5.16 below:

Table 5.16: Summary for understanding of culture in organization (3rd parent node – Theme 3)

Understanding of culture in organization		No of Sources	No of References
Child nodes		**14**	**23**
A	Clearly understood throughout the organization	6	8
B	Understood throughout but some personal attitudes	8	15

The remaining two parent nodes in theme 3 will identify the impact of organizational structure to partnering. The fourth parent node shall determine the current structure of the designer firms, and the fifth node will verify whether their current structure is helping in partnering with other firms. From the results, there seem to be an equal amount of firms with divisional structure and project-based matrix structure. P4, who is in a divisional structured organization, believes that this structure is best in avoiding errors in design, as implied in his response ***"Lately, we do have more structural project compared to infrastructure. We can assist but not for designing. Because that is not our expertise… we can help with the printing, arranging or documentation, but not design. We don't want to risk making errors***

in the design..”. On the other hand, the organizations with project-based matrix structure feel that this type of structure is the most effective way for them to cater to the needs of the market, with their limited workforce, as commented by P5, ***“Ok, we have a small company... so we can always change according to needs. If this project needs an infrastructure engineer, or a geotechnical engineer, we will suit to their requirement.”*** The results for this node can be summarized in the following table 5.17.

Table 5.17: Summary of current organizational structure nodes (4th parent node – Theme 3)

Current organizational structure		No of Sources	No of References
Child nodes		**14**	**26**
A	Divisional structure	8	16
B	Project-based matrix structure	6	10

When looking at the suitability of their current organization structure for partnering practices, most of the participants (8 out of 10) stated that their structure helps when working with other organizations. With most of the firms in construction industry are considered as SMEs (Kamal and Flanagan, 2012), there is less bureaucracy in the operations of these firms and the clients or partners can easily reach the appointed person regarding their project. This is reflected the comments made by P2, ***“...as we are flexible, we are not too rigid in making decisions, in completing the tasks etc. So we are quite flexible and easily understood by other companies. I believe we never have any problems regarding this”*** and P4 ***“People understands, and the clients understands it too... so when the client needs information they will directly contact the person in charge”.*** So in this matter, organizational structure is not seen as a hindrance to partnering, be it divisional or project-based, as it is highly dependent on the size of organization. Table 5.18 below summarizes the results for the fifth parent node for Theme 3.

Table 5.18: Summary for influence of current structure nodes (5th parent node – Theme 3)

Influence of current structure		No of Sources	No of References
Child nodes		**14**	**24**
A	Highly suitable for partnering	12	22
B	Not suitable for partnering	2	2

The analysis conducted in Theme 3 gives the researcher valuable information on the current organizational culture and structure within designer firms in Malaysian construction industry.

5.3.4 ROLE OF ORGANIZATIONAL CULTURE IN PARTNERING

Theme 4 of the interview session is to determine the role of organizational culture in partnering. The analysis for this theme focuses on the issue of similarity of culture in partnering and the measures to be taken to improve the current organizational culture. Figure 5 below portrays the Nvivo 9 screen shot of Theme 4 nodes.

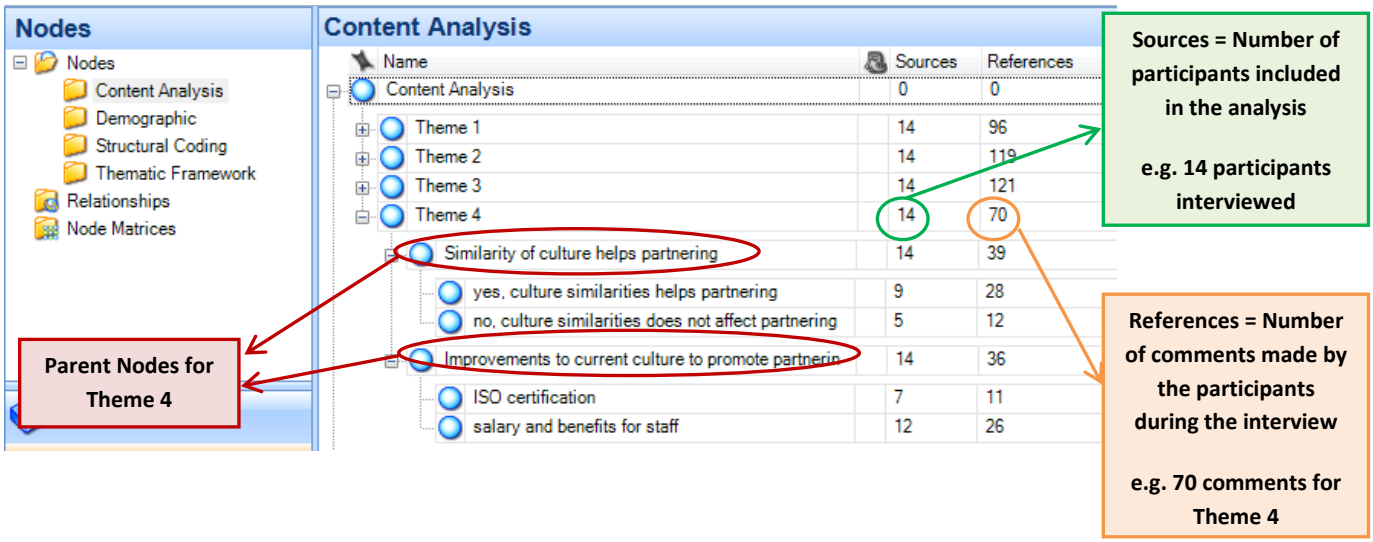


Figure 5.5: Screen shot of Nvivo 10 showing the nodes on the role of organizational culture in partnering

The following Table 5.19 simplifies the parent nodes of Theme 4.

Table 5.19: Summary of Theme 4 parent nodes

Parent Nodes: Theme 4		No of Sources	No of References
Role of organizational culture in partnering		**14**	**44**
1	Similarity of culture helps partnering	14	39
2	Improvements to current culture to promote partnering	14	36

The first parent node (Role of organizational culture in partnering) of Theme 4 seeks to know the views of the participants about similarity of culture among construction firms, and how this helps with partnering. 9 out of 14 participants agree that culture similarity does in fact helps partnering efforts, and will give a better chance of success in that venture. This is based on the belief that similarity in organizational culture implies that partners have similar work ethic values, importance and respect towards each other. Similarity in culture would also means that the relationship between partnering parties will occur almost instantly, without wasting much time, as implied by P10 when asked about how similarity of culture helps working with other organizations, ***"Easier. We don't really need extra time, based on our***

past experiences..we were ok." In general the participants who are in favour of culture similarities also believe that good culture will also significantly improve the output of the collaboration of these firms. Among these participants are P8, who commented, ***"It does affect the success. Within this company we have on-going rifts. If we can resolve all of it, we can always produce better products. We can reduce the errors on site. The environment and culture within a company is vital. We would still have output even if the company is not a pleasant place to work at, but the quality of output would probably be a lot less…."*** and P12,***".. for partnering, it is best to get the people that you know personally or comes highly recommended by people that you know who works very well. This will contribute to the coordination of the project. If all elements work well and placed in position, then only partnering becomes seamless. Otherwise it might appear disjointed, or does not flow right..."***

On the other hand, the remaining participants (5 out of 14) believe that partnering success is not influenced by culture similarities, but rather the professionalism and understanding of roles by each of the construction parties. This can be seen in the responses of P4, ***"It all depends if everyone plays their part, we will get good results... which means we cannot really contradict the architect..they will have their own criteria, we have our own. If the architect plays their part, we do ours..we will get good results. That's it. Play each other's role"*** and P5, ***"I understand their work attitude and believe in their professionalism. Here in this organization, the requirement may not be as stringent, but when needed to perform for higher requirement, they can easily adapt. No problem... easily".***P13, who is a senior manager, also believes similarly by saying ***"… they have to understand their objectives. What are their goals? So we have to work towards that objective. If we keep that in mind, there shouldn't be any problem. Regardless of the organizational culture.."***

The results of the first node can be summarized in table 5.20 below.

Table 5.20: Summary for similarity of culture helps partnering node (1st node – Theme 4)

Similarity of culture helps partnering		No of Sources	No of References
Child nodes		**14**	**39**
A	Yes, similarity of culture helps partnering	9	28
B	No, culture similarities does not affect partnering	5	12

The second parent node (Improvements to current culture to promote partnering) of Theme 4 focuses on the opinion of the participant on what should be done to improve their current organizational culture in order to promote partnering. Basically the participants believe that ISO certification and improvements to employee benefits and salary will give the necessary impact in their organizational culture which in turn will improve the success of partnering. The analysis of the data for this node has reflected how different management and employees views can be. Unsurprisingly, the participants who believed that ISO certification is necessary were from the top management, as reflected by P13 "With ISO we have guidelines, the monitoring… so if one cannot achieve what is targeted, they have to work out a way to achieve it in whatever way possible so that they can improve. This really helpful for developing the right culture in the organization…", while the participants who were the employees think that improvements in salary and benefits for them shall give the much needed motivation to improve their morale to actively participate in any partnering activities. Examples of the latter include the views of P11, ***"… the salary perhaps. Don't think your employees don't compare with others in the industry. Make sure that the salary is according to the current rate. Secondly, the benefits for employee such as transportation, housing…"*** and P8 ***"I don't think the annual increments here is based on performance, more likely based on your loyalty. How long you have been working here… from this I feel that some of the staff might not feel the need to perform well as they will get the same increment as the hardworking staff."***

Table 5.21 below simplifies the finding for this final node of Theme 4.

Table 5.21: Summary of improvements to current culture node (2nd parent node – Theme 4)

Improvements to current culture to promote partnering		No of Sources	No of References
Child nodes		**14**	**36**
A	ISO certification	7	11
B	Salary and benefits for staff	12	26

In analysing the qualitative data for this research, a number of emergent themes have been discovered and coded along the themes that the researcher has set out to study. Most of these themes are similar to the themes found in current literature review regarding partnering in the construction industry. These themes are housed together in a node for analysis in Nvivo 10 and shall be discussed in detail in the following section.

5.3.5 EMERGENT THEMES

The literature review has revealed a number of factors that could be attributed to partnering. Culture, communication, collaboration, tools, policies and procurement are some of the many factors of partnering. In the analysis of the interview data, there were some themes emerged that could not be housed in the structural coding and the 2nd stage coding for content analysis, as the data originated not as answers to interview questions but rather as comments of elaborations of the participants' comments. The following Figure 5.6 shows the analysis for the emergent nodes in Nvivo10.

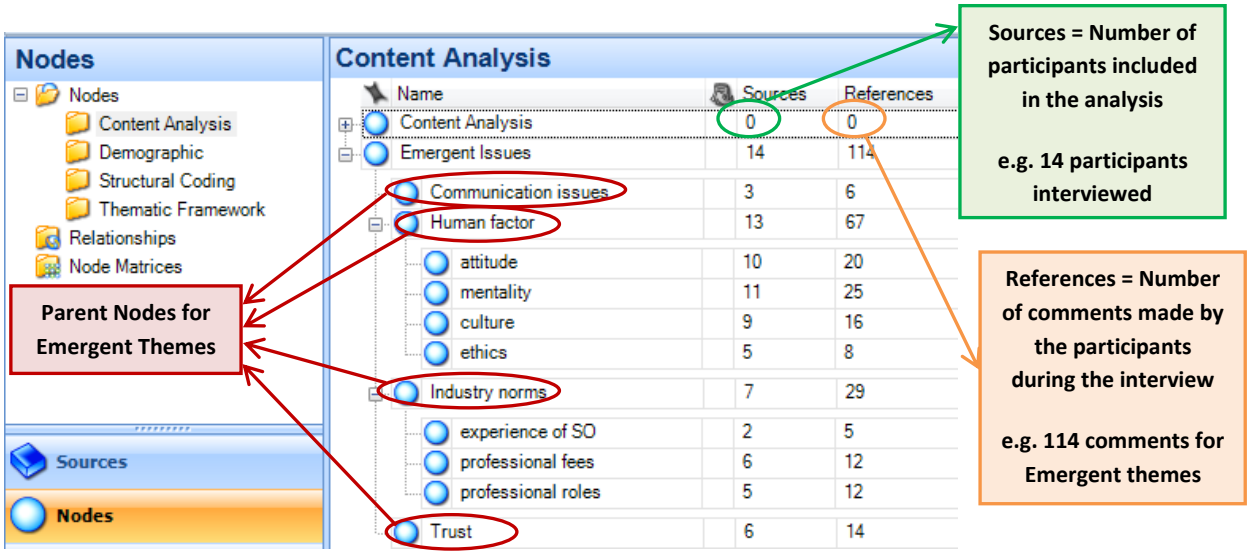


Figure 5.6: Screen shot of Nvivo 10 showing the nodes on emergent themes

Some of these themes are similar to the factors found in partnering literature; some are more specific to the context of Malaysian construction industry. Table 5.22 below portrays the summary of emergent themes nodes in this research.

Table 5.22: Summary of Theme 5 emergent nodes

Parent Nodes: Emergent themes		No of Sources	No of References
		14	**114**
1	Communication issues	3	6
2	Human factor	13	67
3	Industry norms	7	29
4	Trust	6	14

a. COMMUNICATION ISSUES

The communication issues in partnering relates to the efficiency of information flow from one party to another in construction projects. From the interviews, the communication issue that was highlighted by the participants results from not being able to communicate with the local authorities due to political differences. Malaysia is made of 14 states, 4 of which are governed by the opposition political party. Most of public construction projects are tendered out by the federal government. This causes rifts among the local state authorities and the private firms which have won the tender for construction projects. P3 response to communication issues with local authorities on site best represents this situation, ***"They (local authorities) perceive us as the one who causes the locals to be out of jobs..but that is not our problem. The top people (federal government) made these decisions, we are only the ones who are doing our jobs. Furthermore it is not a bad thing, it is also for our children, our village, our state… we are employed. So there is a problem. It is difficult to communicate with such local authorities…".***However the issue is much more localized in nature and the researcher found that only participants who have worked in construction projects within the opposition governed states have experienced this problem.

b. HUMAN FACTOR

In discussing partnering with the participants, the issue of the influence of the human factor to partnering success was mentioned quite a number of times (46 references in total). Most of the participants believed that in order to ensure partnering success, the influence of human related factor should be considered. This can be in terms of inculcating positive values from young age (P4 – ***"Even if it is a small matter, we need implant the values…. The attitude needs to be developed from school. If we were to go on with a no-caring culture, there is plenty to be resolved…"),*** or changing the cultural mindset of the society (P5 – ***"It could then be attributed to our own society's problem... there must be mind and cultural adjustments, and then when we implement new things, then only the whole system can support..."***and P14 – ***"The people have to change, the society… if we don't change, we would not succeed implementing anything. Not only that, we need change in our education system as well"),*** or even the personal attitude of staff in the organizations (P5 – ***"It is the attitude. To me, the attitude of employees in government agencies... that is why the PM is***

trying to improve the efficiency of the government but to no avail... as it affects the individual. The system depends on the individual, person, human... not everyone is the same").

In entirety, it can be seen that the basic unit of partnering success depends on the players themselves. How ready are they to change towards the requirement of partnering, how willing they are to let go of their previous preconceptions of how the industry has been and most importantly, how far they will go in accepting new ideas and practices. A total overhaul of conventional way of working may be needed, and all stakeholders in the Malaysian construction industry must play their part to facilitate the change for the better. As with many other changes, there will be natural resistance to it in the beginning, but rigorous efforts within a specified time frame could help in this matter, as sufficiently put by P9 ***"It takes time to adapt..but we cannot take too long, things might get 'stale'. We need checkpoints along the way, are you following this or not... but we cannot be very strict; there could be a culture shock. But for things that is normal, there is a time frame to it..."***, and P10 ***"The human factor should also be considered. In the UK people might accept, maybe not so in Malaysia. The culture is entirely different. If we do it too drastically, people will question, and may resist to change. We adopt what is good, take it gradually. We cannot be hasty on this."***

c. INDUSTRY NORMS

Among of the many issues brought up when the participants were asked about the possibility of partnering success in Malaysia, was the industry norm, on how things were usually done in the Malaysian construction industry. These include;

- ***Experience of SO -*** The role of SO (Superintendant Officer) in construction projects is seen as the most appropriate position in managing the partnering efforts in a construction project. However, the issue with the current Malaysian construction industry is that the officer in that role are not experienced enough in controlling the entire construction team, as sometimes the SO is a government officer selected from the ministry and may have only been in that position for less than 5 years. There could be a lack of respect from the other construction professionals in the project who probably

had years of experience, as reflected by P6 comment***, "When you see an architect leading, sometimes those young people lead the meeting, sometimes, I guide the chairperson through all those thing. It shows that this needs experience"*** and the response by P12, ***"… they cannot decide… maybe just graduated for a couple of years, still unsure of things."*** Placing an experienced SO could be a better solution when the industry is trying to move towards partnering in construction projects.

- ***Professional fees*** **-** The participants are also in an opinion that professional fees can cause a hindrance to partnering being fully implemented in Malaysia. The professional bodies for architects, engineers and quantity surveyors each has their own recommended fee percentage for construction projects. If the move towards partnering requires some adjustment to this percentage, the participants interviewed expressed their concern on its applicability as they perceived reducing the fee percentage for some parties may be difficult to accomplish. This can be seen in the responses from P6 ***"We are talking about the proportion of the fees that is the reason why it's very difficult for them to work with each other"*** and P1 ***"..say we meet a developer and they want to form a team. They have divided the percentage for consultants, for example 8%. And we know that 8% is a small amount to be divided into 4, and to get consensus for that is also a problem… and architect has the higher fees. In this situation we cannot give the architect fees as recommended by their professional board. Sometimes the architect insists on getting their standard fees percentage..that is difficult actually.."***. Based on the responses from the participants, the researcher is in the understanding that unless there is a better way to allocate the fees of the consultants and other specialist firms in a construction project, the outlook for partnering implementation is not very promising in Malaysia.

- ***Professional roles*** **-** Although the construction industry is one of the main contributors of employment in the Malaysian economy, there seems to be an issue in understanding the professional roles of each and every one of the firms involved in a construction project. The participants believe that the lack of understanding of each other's role largely contributes to the already adverse relationship that is present in the construction industry. P5 stated that ***"Because sometimes, when we want to partner, they do not understand..what is their role. There will be overlapping of scope of work, where***

we'll say.. "you should do this, why should we do.. that is your scope, you should do it".. Things like these." The lack of understanding of roles could also lead to other problems, like wasting time trying to come to a common agreement in solving problems on site. This is reflected by the response of P10 ***"It is hard to get everyone to agree on one solution. Everybody put forward their priorities; it is hard to achieve a common solution. Contractor has their methods, consultant and architects too. Problems occur when we try to incorporate each other's methods..it might work, but we could waste valuable time."*** The industry players must be educated on the role of their counterparts to understand each other better, if a pleasant collaborative nature of partnering is to be achieved in the Malaysian construction industry.

- ***Trust*** - Trust is a crucial part of any partnering venture. It is no exception that trust is viewed by the participant as one of the 'make or break' a partnering relationship. Some of the participants had mentioned that although they can collaborate well with other companies in a project, there will still be limitations on trust. The participants believed that, among many things, trust equates to being transparent about how much profit your firm is making with your partners. When the issue of money is included in the equation, they feel that the Malaysian construction industry has a long way to go to fully commit in a trusting partnering relationship. The responses of P5 ***"...when the questioning about money starts, because it is all due to trust issues. It triggers the crisis"***, and P3 ***"..well, to put our trust in others, when it comes to money, even siblings can argue.."*** essentially reflects that the understanding of trust relates to money.

The findings from the main 4 themes and emergent themes included in the analysis have been thoroughly discussed. The next sub-section will summarize the entire section and highlight the key findings discovered in data analysis.

5.4 SUMMARY

This section has discussed the interview that has been conducted for the purpose of data collection for this research. The four main themes were explored and data from the interviews were analysed accordingly and shall be briefly described in this section.

It is apparent from the findings that although the participants do not know the exact meaning of partnering in the context of construction industry, they have been already practicing collaborative working with other organizations. Although it is done informally, they are able to understand the many benefits that could result from partnering and what issues that may arise from collaborative working with other parties. Design and build (D&B) projects were taught to be one of the most similar methods to partnering, and it is clear that the participants are not entirely sure of the difference between D&B and partnering. In general, most of the participants are optimistic about partnering and the authorities governing the construction industry should play a role in educating the industry about partnering if that is the way forward.

The results also show that the level of knowledge for Malaysian construction professionals are quite limited to the information channels from the government or their professional bodies. Most of the participants interviewed have never heard of partnering practices in the UK or other countries, while admitting that unless it is required by the government or client, such new information will not be searched at their own leisure. However, their optimism for partnering should be credited, and having a general idea of what partnering might be, the participants had deducted what is required to enable partnering success in the Malaysian construction industry. The participants had also generally agreed that a proper guideline is needed for partnering to be implemented, which confirms the need for this research.

From the results, it can be seen that the designer firms in Malaysia generally has a flexible organizational culture, with more firms placing the needs of their employees before the demands of their clients. This could be due to the fact that most of the designer firms in Malaysia are SMEs, which made it easier for the top management to make their visions understood by the employees due to their small organization size. There seem to be no influence of type of organizational structure of the designer firms when dealing with other firms as shown in the results.

As for the influence of culture to partnering, majority of the participants believe that culture similarities greatly improve the success of partnering. This is based on the belief that similarity in organizational culture implies that partners have similar work ethic values, importance and respect towards each other. Similarity in culture would also means that the relationship between partnering parties will occur almost instantly, without wasting much time. In general the participants who are in favour of culture similarities also feel that good culture will also significantly improve the output of the collaboration of these firms, which agrees with the findings from literature review.

The richness of qualitative data has assisted the researcher in gaining a fuller perspective on the awareness and understanding of partnering in the Malaysian industry, and how culture could assist in enhancing partnering success. The researcher was also able to capture the specific characteristics of the Malaysian construction industry and the view of construction professionals on partnering. The next section shall discuss the analysis of quantitative data which will yield the generic industry data needed for the merging of data to draw conclusions for this research.

CHAPTER 6

QUANTITATIVE DATA ANALYSIS

6.1 INTRODUCTION

This section will extensively discuss the quantitative data analysis conducted for this research. It begins with discussing questionnaire as method of quantitative data collection. The design of the questionnaire shall be explained, as well as the plan of investigation employed. The results of reliability test conducted will also be included in this section. A detailed elaboration of the surveyed sample shall follow and the discussion continues to highlight the findings gained from quantitative data analysis, which was conducted with the aid of SPSS 17 software. This section ends with a summary of key findings from the quantitative data analysis.

6.2 QUANTITATIVE DATA COLLECTION – QUESTIONNAIRE

The questionnaire used in this research was formulated based on the same objectives as the interview questions. In general the questionnaire was divided into three main parts; the first part is for the respondent profile, second part is to determine whether the respondent's awareness on partnering and the final part is to identify the organizational culture of firms in the Malaysian construction industry.

The nature of construction industries anywhere is the diverse workforce, which amount to large number of professionals at work. To interview all of these professionals is beyond the researcher's capacity; therefore questionnaires are used to reach more respondents for this research. The targeted sample for this research are the professionals working in the construction industry, with these individual working in any of the 6 construction industry segments as described by Blaise and Manley (2000). The target samples for this questionnaire survey are construction professionals who are over the age of 18 years and are working in the Malaysian construction industry. A brief description of the research focus was attached to

each questionnaire. The questionnaire employed in this research has fulfilled all ethical requirements as passed by the University of Salford's ethical committee. In total, there were 100 questionnaires distributed with 69 has been completed and returned. The snowball method of distribution was used when approaching target construction firms and in many instances, those approached had other colleagues or friends that satisfy the target sample requirement. All questionnaires are anonymized, as stated in the ethical requirement.

6.2.1 QUESTIONNAIRE DESIGN

The questionnaire is divided into 5 sections as follows:

a. Section I – Respondent profile

The first section of the questionnaire focuses on the details of the respondent with 8 questions. These questions include; job title, level of qualification, country in which the qualification gained, age category, number of years in current organisation, number of years in the industry, number of employees supervised and the size of the organisation. This section aims to gain a full description of the sample. This section includes a question of supervision to determine whether the respondent has subordinates or not, as this will imply whether or not that the respondent is in a managerial position. This information is needed to investigate if there is any difference in opinion between the construction professionals in managerial positions and employees, when it comes to perceptions of organizational culture and partnering experience of the respondent.

b. Section II – Understanding of the partnering concept (Theme 1)

In this section, the respondents are asked a series of questions relating to their experience and understanding of partnering. This section aims to indentify the respondents experience of partnering, and whether they feel that their organisation currently possess criteria which enables partnering. In total, there are 20 (items 9 - 28) in this section. For questions 10 to 28, the respondents are given statements which describe partnering related activities and are instructed to indicate on a 5-point Likert scale; whether they agree or not with the statements

which are opinion based, and in the action based statements, whether it is likely or unlikely their firm would react as described.

c. Section III – Awareness of partnering practices (Theme 2)

In this section the respondents are given questions to identify the whether or not the respondents have an awareness of partnering practices other than what is happening in Malaysia. There are 3 items included under this theme; 2 items where respondents have to indicate their agreement on partnering awareness statements on a 5-point Likert scale and 1 open ended question where respondents can provide their suggestion as how to implement partnering in Malaysia.

d. Section IV – Organizational culture and structure in Malaysian construction firms (Theme 3)

Section IV the questionnaire sets out to determine the organizational culture of firms in the construction industry. This section is designed to identify the organizational culture characteristics of the firm based on 7 dimensions of organizational culture inspired by Cheung et al (2011); client orientation, workforce orientation, leadership/management, outcome/performance orientation, reward orientation, innovation and teamwork. In this section, respondents are asked to choose 1 of 4 statements which best describe their organisation under the known 7 dimensions of organizational culture. Each of the statements represents different type of culture namely; clan, adhocracy, hierarchy and market, with different levels of stability and focus (Cameron and Quinn, 1999). The findings in this section are crucial to provide a general idea of organizational culture type within the construction industry. 2 questions to determine the type of organizational structure of the respondents' firms are also included at the end of this section.

e. Section V – Role of organizational culture in partnering (Theme 4)

The final section of the questionnaire is designed to investigate the personal opinions of the respondents of whether they think that organizational culture affects partnering success and what they think can be done to current organizational culture to ensure partnering success.

These questions are also asked in the interviews sessions, and by having the same questions in the questionnaire, the researcher will be able to look at suggestions from the quantitative data pool, and draw a collective conclusion for this research. To ensure the questionnaire is reliable in producing consistent results, a reliability test is conducted for the questionnaire in this research. The reliability test conducted has been described in the previous Section 4.8 in Chapter 4.

Accordingly in order to determine the normality of quantitative data obtained in this research, normality tests have been conducted using SPSS17 to seek the normality of data. The results indicate the data distribution is non-normal as shown in Appendix 2 of this thesis, and thus requires non-parametric statistical tests in further analysing the results.

6.2.2 SAMPLING PROCEDURES

Considering the background of the research and the cultural aspects of the research context, the most appropriate sampling method for this research was convenience and snowball sampling. This method was chosen based on previous research done in construction industry among the Southeast Asian countries (Ruthankoon and Ogunlana, 2003; Sambasivan and Yau, 2007) which population has similar characteristics to the target population in this rese. Accordingly, Sekaran (2005) mentions that the convenience and snowball sampling method is preferred in situations where it is difficult to get response from sample elements selected at random and is suitable for an exploratory research.

Browne (2005) highlights the importance of personal networks in this method of sampling. The non-probabilistic convenience sampling with snowball technique enables the researcher to gain initial respondents through personal networks and university alumni as well as through referral networks, and has made it possible for the researcher to obtain a reasonable number completed questionnaires for analysis. 100 questionnaires were distributed to practitioners who are representative of the population. Through the use of the abovementioned networks, 69 completed questionnaires were received. This number is a satisfactory and realistic figure considering the cultural limitations for a female researcher in gaining access for surveys and interviews at present, as the construction industry in most Southeast Asian countries is still a male-dominated industry (Abdul-Aziz, 2001; Ling and

Leow, 2008). The previous sub-section has discussed the research instrument for quantitative data collection, as well as justification for the sampling methods adopted in this research. The next sub section will elaborate on the findings from the questionnaire, which is organized according to the sections in the questionnaire itself, as attached in Appendix 3 of this thesis.

6.3 FINDINGS FROM QUESTIONNAIRE

6.3.1 RESPONDENT PROFILE

a. JOB TITLE

For the purpose of profiling the sample, the respondents are asked of their current job title. This is to ensure that the respondent is currently a participant in any one of 6 segments in the construction industry, to determine if they are in a managerial position and to investigate if there any difference in opinions with different positions in construction firms. The job titles of the respondents are then categorized into 3 groups namely; top management, middle management and employees. Out of the 69 respondents; 11 respondents are in the top management group with job titles such as directors or associate directors, 24 respondents belong to the middle management group and the remaining 34 respondents which are employees with job titles such as site engineer, sales engineer or assistant engineer. The job titles distribution for the sample can be detailed in Figure 6.1 and Table 6.1 below.

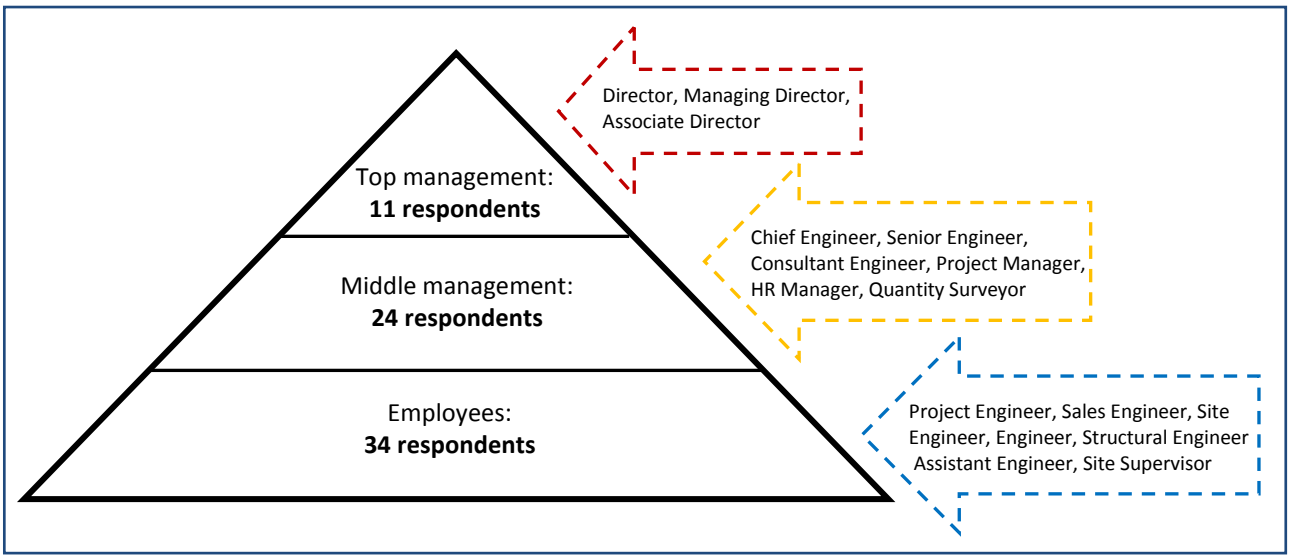


Figure 6.1: Job title distribution of research sample

Figure 6.1 has shown that the distribution of respondents in various job titles across the construction industries, and clearly indicates that appropriate proportion of managerial positions are included within the sample. This is crucial in determining the right type of organizational culture within construction firms as the views of all levels in the organization are accounted for. The distribution is shown in detail in in the following Table 6.1.

Table 6.1: Job titles of respondents in the research sample

	Job titles	Frequency	Percent
Valid	Associate Director	3	4.3
	Managing Director	2	2.9
	Director	6	8.7
	Chief Engineer	4	5.8
	Consultant Engineer	4	5.8
	Senior Engineer	3	4.3
	Quantity Surveyor	4	5.8
	HR Manager	4	5.8
	Project Manager	5	7.2
	Structural Engineer	7	10.1
	Sales Engineer	4	5.8
	Project Engineer	8	11.6
	Engineer	4	5.8
	Assistant Engineer	3	4.3
	Site Supervisor	2	2.9
	Total	**69**	**100**

b. LEVEL OF EDUCATION

The respondents are also asked of their highest level of qualification in the next question. This information is important to gain a perspective of the general level of education that one should have when working in the construction industry. 71.1% of the respondents have bachelor's degree qualification, 21.7% have masters and a minority of 7.2% have diploma qualification. The results for the distribution of qualification level for the respondents can be seen in the following Figure 6.2.

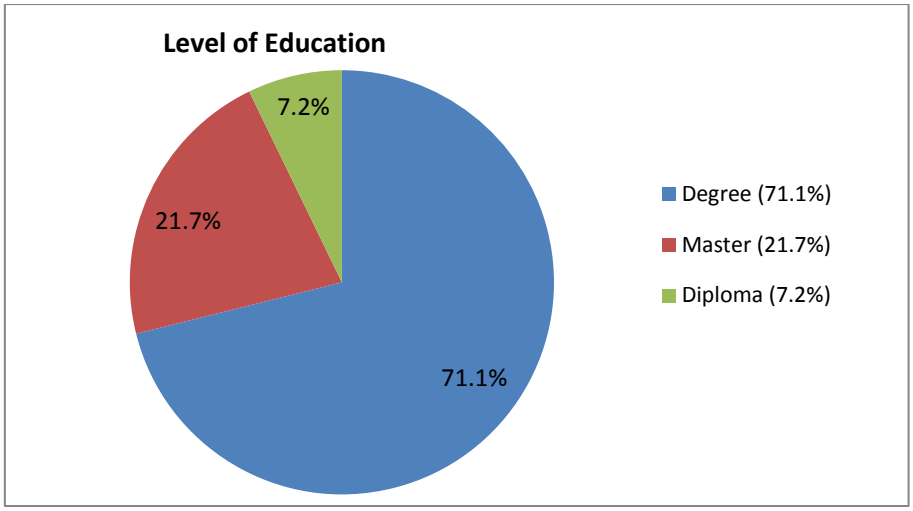


Figure 6.2: Distribution for respondents' highest level of education

The results shows that most of the respondents included in the questionnaire survey are construction professionals, having had degree qualification prior to joining the industry. Therefore the views of the respondents in this research are primarily construction professionals, which will be the decision makers in construction firms, if not already in that position.

c. COUNTRY WHERE QUALIFICATION GAINED

The researcher feels that it is important to know where the respondents gained their qualification to investigate whether there is a relation between the awareness of partnering practices in other countries and studying for the qualification abroad. From the sample chosen, 75.4% gained their professional qualification in Malaysia, and the remaining 24.6% of the sample studied in UK, Australia and New Zealand. The results for this question can be detailed in the following Figure 6.3.

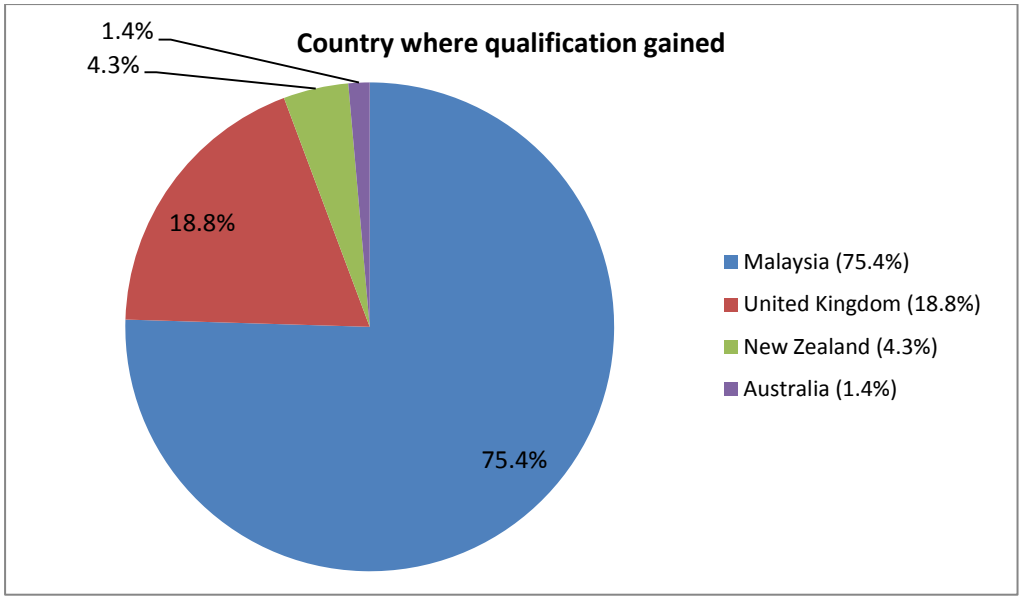


Figure 6.3: Distribution for countries where respondents gained their qualification

During the interview sessions, there are comments from participants relating studying abroad and awareness towards partnering practices in other countries. With this information, the researcher will be able to investigate whether or not respondents studying abroad have more knowledge about partnering in other countries in a more general setting.

d. AGE CATEGORY

To fulfil part of the University's ethical requirement, the sample is screened to make sure that there is no respondent below the age of 18 are included in this research. With reference to the highest qualification level of respondents which is bachelor's degree, it can be predicted that most of the respondents will be 20 years of age and above, having completed their tertiary education. The main age group in the sample is the 25 to 34 years old, which would have been working for at least 3 years in the construction industry and is accounted for 47.8% of the entire sample. The details of respondent's age can be seen in the following Figure 6.4.

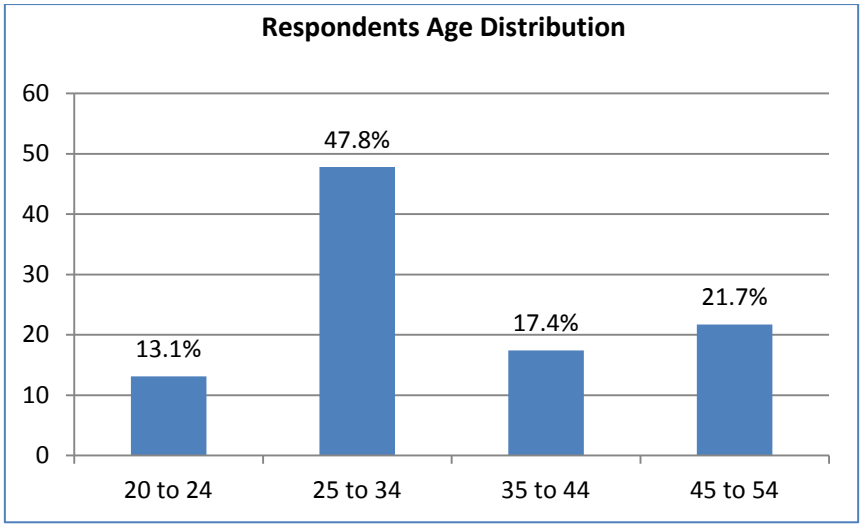


Figure 6.4: Respondents age distribution

The youngest respondent age group included in the survey is the 20 to 24 years old, which are mostly engineers who have just completed their bachelor degree. The oldest respondent age group is the 45 to 54, which accounted to 21.7% of the sample. This age group is mainly made of the top management in construction firms with job titles such as director, managing director and associate director.

e. NUMBER OF YEARS IN CURRENT ORGANISATION

Considering one of the objectives of the data collection stage is to determine the organizational culture in construction firms, it is only relevant that the respondents are asked of the number of years they have been working in their current organisation. The researcher feels that this information is crucial to see if there is any difference in the respondent's opinion in identifying their organizational culture. The results shown that more than half of the respondents have only been working at their current organization for no more than 6 years, with the largest group of respondents (43.5%) working for no more than 3 years. The detailed results for this question are as shown in the following Figure 6.5.

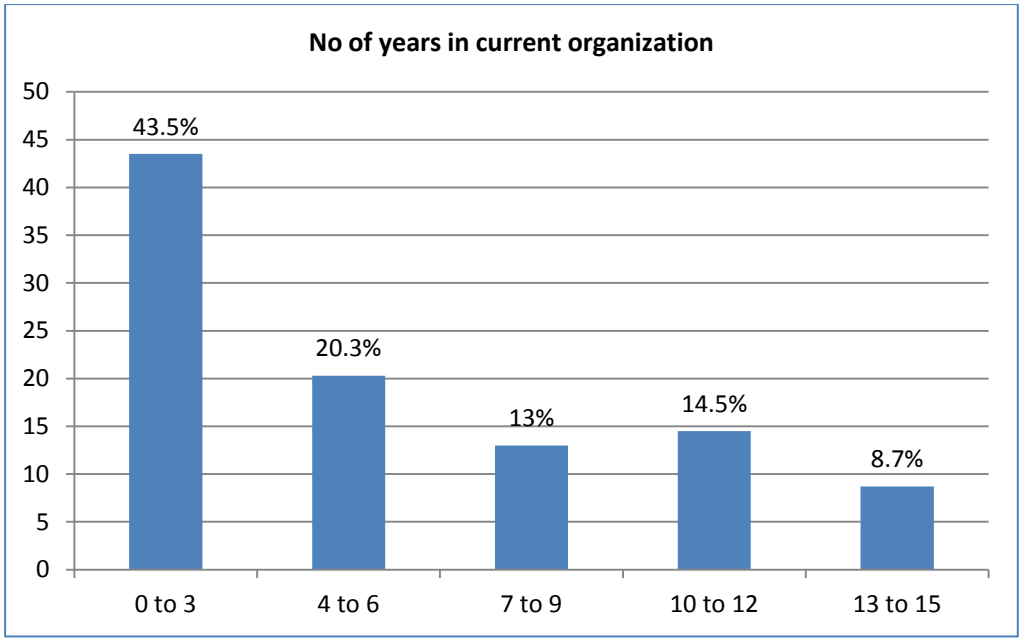


Figure 6.5: Respondents distribution – Number of years working in current organization

It can be seen from the results that there is high turnover for construction industry in Malaysia, as construction professional changing jobs within the industry after a number of years. This could be due to the nature of the construction industry, which is made of discontinued informal corporations which usually disbands after the completion of construction projects. The percentage of respondents working in a firm for more than 7 years is significantly less compared to the first 2 groups, which could be attributed to the fact with that amount of experience, employees would have gained their professional certification by then which enables them to start their own practice. This could also explain the number of respondents working for more than 13 years in their current firm as shown in Figure 6 above, which could probably be the directors or principals of their own firm.

f. NUMBER OF YEARS IN INDUSTRY

The researcher also feels that it is important to know the experience of respondents which can be determined by the number of years that the respondent has been working in the construction industry. This information may reflect any knowledge that they may have of partnering, or whether they believe partnering can be implemented in Malaysian construction industry. With this information, the relation between the knowledge of partnering and working experience can be explored, to enable the researcher to gain a fuller understanding of

the perspective of construction professionals regarding partnering in Malaysia. The experience of respondents in the sample can be seen in detail in the following Figure 6.6 below.

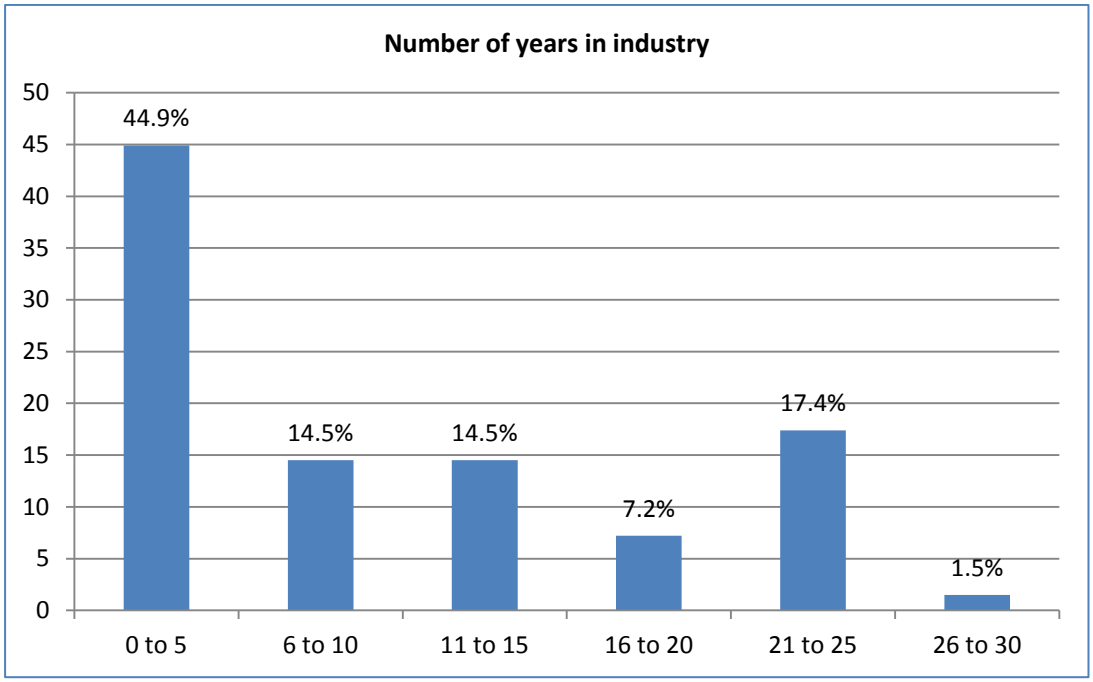


Figure 6.6: Experience of respondents in construction industry

In general, most of the respondents in the survey have been working in the industry for no more than 5 years. The reason why this group is the largest sample is probably because they are in the junior position in their organisation, and are more easily available to complete the survey, as compared to those in the middle or top managerial position. The sample is also represented by more senior professionals as can be seen in approximately 19% of respondents who have been working for more than 20 years. It will be interesting to know if there is any difference in opinion regarding partnering in Malaysia between respondents who have been working more than 20 years, and the respondents who are only starting to work in the industry, having appointed for no more than 5 years.

g. SIZE OF ORGANISATION

The respondents were also asked of the number of employees in their organization. The results conclude that the respondents approached for this survey all belong to a SME firm, with 14.5% working in a firm with less than 20 employees, and the majority of sample

(85.5%) working in a firm of 21 to 50 employees. The detailed results are depicted in Figure 6.7 below.

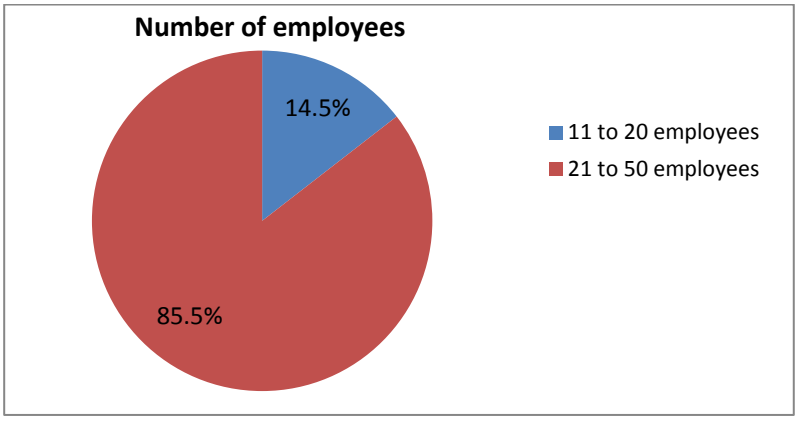


Figure 6.7: Size of organisations included in the sample

The size of organisations in which the respondents are working at can be categorized as SMEs, having less than 50 employees. This corresponds with the findings of Kamal and Flanagan (2012) which highlighted that SMEs are at the core of Malaysian construction industry and account for about 90% of companies undertaking construction work in the country.

h. NATURE OF BUSINESS

The respondents are asked about the nature of business of their organisation. There are 5 types of construction firms included in this questionnaire survey which are contractors, engineering designers (consultants), architectural designers (architect), developers and manufacturers. The percentage of respondents according to firms is shown in Figure 6.8 below.

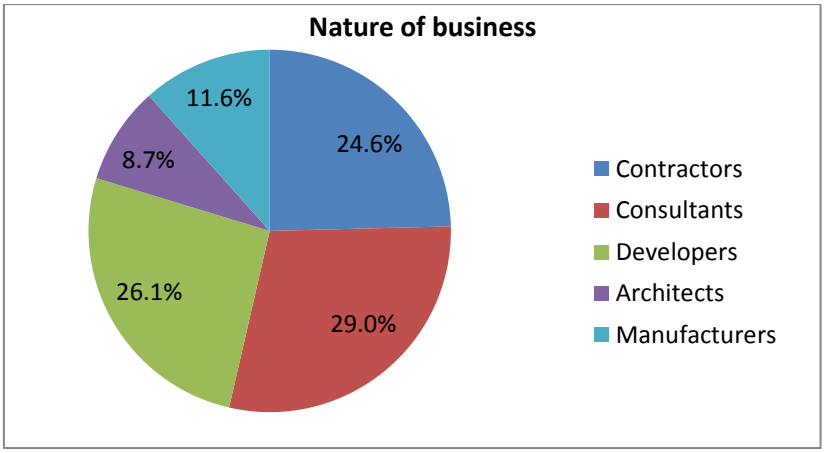


Figure 6.8: Nature of business for organisations included in the sample

6.4 PARTNERING IN MALAYSIAN CONSTRUCTION INDUSTRY

This section describes the findings from Section II and Section III of the questionnaire survey. Section II of the questionnaire survey is designed to investigate the understanding of overall concept of partnering as described in partnering literatures (Theme 1) and Section III is developed to identify the level of awareness of other partnering practices and to determine whether they would consider it to work in Malaysia (Theme 2). It should be highlighted that these themes are parallel to the themes in the interview survey, as discussed in the previous qualitative data analysis chapter.

The discussion for this section will be according to the following order; the aim and objective for each theme, the allocation of questions under each theme, the frequency distribution for the responses, response interdependence which will be identified with non-parametric chi-square, Kruskal-Wallis tests and cross-tabulations, and finally the correlation between items which will be tested with Pearson's correlation test.

6.4.1 UNDERSTANDING OF THE PARTNERING CONCEPT (THEME 1)

The aim of this theme is to identify the understanding of partnering concept among Malaysia construction professionals and to assess their level of engagement in partnering activities. There are 20 questions (Q9-Q28) under this theme in Section II of the questionnaire. The respondents are asked whether or not they have been involved in partnering at the beginning of this section (Q9). These factors are shown in the following Table 6.2, which entails the designated questions and its corresponding factors.

Table 6.2: Detail for the objective of questionnaire items and corresponding factors.

Section	Objective	Enabling factors of partnering	Item ID	Theme of Questions
II	To know if the industry players understand the overall concept of partnering as described in partnering literatures		Q9	Have you ever been involved in partnering?
		Collaboration and cooperation	Q10	Collaborative working
			Q11	Cooperative relationship in and out of projects
		Trust	Q12	Allow information exchange
			Q13	Familiar and trusted partners only
			Q14	Trust-building efforts in projects
		Procurement	Q15	Engage in flexible procurements
			Q16	Restrict to fixed type procurements
			Q17	Comply with client procurement choice
		Communication	Q18	Open communication channels
			Q19	Specific team for communication
		Tools	Q20	Partnering related workshop and meetings
			Q21	Formulation of partnering tools
		Commitment	Q22	Financial free commitments
			Q26	Ease of commitment to new partners
		Policy	Q23	Regulation for partnering
			Q24	Support for partnering
		Culture	Q25	Similarity in culture and work ethics
			Q27	Ease of culture adaptation
			Q28	Extra efforts for synchronisation

Table 6.2 above displays the remaining 19 questions (Q10-Q28) that consists of statements indicating partnering activities which are based on the 8 partnering factors as found in current partnering literatures. The respondents are given instruction to select based on their experience, the course of actions or statements which best describes their organization where partnering is concerned on a 5-point Likert scale.

a. FREQUENCY DISTRIBUTION OF RESPONSES

For questions 10 to 28, the respondents are given statements which describe partnering related activities and are instructed to indicate on a 5-point Likert scale; whether they agree or not with the statements which are opinion based, and in the action based statements, whether it is likely or unlikely their firm would react as described in the statements. The percentage of frequency distribution for the responses is as shown in the following Table 6.3.

Table 6.3: Frequency distribution of responses for questions in Section II of the questionnaire

Factor tested	Item No	Theme of Questions	Percentage (%)				
			Strongly agree / Very likely	Agree / Likely	Not sure	Disagree / Unlikely	Strongly disagree / Very unlikely
Collaboration and cooperation	10	Collaborative working	18.8	63.8	17.4	-	-
	11	Cooperative relationship in and out of projects	23.2	50.7	26.1	-	-
Trust	12	Allow information exchange	30.4	37.7	7.3	24.6	-
	13	Familiar and trusted partners only	4.3	40.6	17.4	30.4	7.3
	14	Trust-building efforts in projects	7.2	49.3	27.5	7.2	8.8
Procurement	15	Engage in flexible procurements	8.8	53.5	21.7	7.2	8.8
	16	Restrict to fixed type procurements	21.7	42.1	15.9	20.3	-
	17	Comply with client procurement choice	15.9	60.9	13.1	10.1	-
Communication	18	Open communication channels	2.9	37.7	26.1	18.8	14.5
	19	Specific team for communication	10.1	44.9	5.8	21.8	17.4
Tools	20	Partnering related workshop and meetings	5.8	30.4	23.2	31.9	8.7
	21	Formulation of partnering tools	-	30.5	18.8	34.8	15.9
Commitment	22	Financial free commitments	2.9	17.4	17.4	40.6	21.7
	26	Ease of commitment to new partners	-	11.6	21.7	42.1	15.9
Policy	23	Regulation for partnering	-	10.1	23.2	50.8	15.9
	24	Support for partnering	-	20.3	26.1	37.3	15.9
Culture	25	Similarity in culture and work ethics	-	21.7	50.7	11.6	15.9
	27	Ease of culture adaptation	-	8.7	27.5	42.1	21.7
	28	Extra efforts for synchronisation	-	34.8	50.7	7.2	7.2

The table above has shown the distribution of responses according to key enabling factors of partnering as revealed by the literature review. A general observation indicates that in certain aspects, some of the key enablers are already present while some are still not developed. Detailed explanation of the results in Section II is as follows:

i. Collaboration and cooperation (Items 10 – 11)

The respondents are asked to indicate their agreement on 2 statements regarding collaborative working between firms in construction industry, based on their experience in their current organisation. In item 10, only 17.4% of the respondents who are not sure of whether their organisation have worked collaboratively with other companies in construction projects, while the rest of the respondents have either chosen to agree (63.8%) or strongly agree (18.8%) with the statement. Similar results are also shown in item 10, which imply that their organisation has had cooperative relationships in and out of projects with other companies. In item 11, 73.9% of the

respondents indicate that their organisations are likely or very likely to have cooperative relationship in and out of projects. The following Table 6.4 below indicate the detailed frequency distribution for items corresponding to the collaboration and cooperation factor.

Table 6.4: Detailed results for items corresponding to Collaboration and Cooperation factor

Item No		Responses			Total	Standard deviation
		Not sure	Agree / Likely	Strongly agree / Very likely		
Q10	Frequency	12	44	13	69	.606
	Percentage	17.4	63.8	18.8	100	
Q11	Frequency	18	35	16	69	.707
	Percentage	26.1	50.7	23.2	100	

From the results, it is very clear that collaborative working and cooperation among construction have been the norm in Malaysian construction industry. In both items for this factor, the respondents have indicate positively that their organisation have worked cooperatively with other companies and acknowledge that their organisation has cooperative relationship in and out of the projects with other companies.

ii. Trust (Items 12 – 14)

Trust is essential in any partnering relationship. Respondents are asked of their experience with their organisation regarding trust when working with other companies. For the factor of trust, 3 items are included in the questionnaire; item 12, 13 and 14. In item 12, majority (37.7% agree, 30.4% strongly agree) of the respondents feel that their organisation trust other companies that work with them that they would allow free information exchange. When asked whether their organisations only work with companies that they are familiar with and trust in item 13, 40.6% of the respondents indicate that it is likely their organisation would do so, while 30.4% thinks that it is unlikely. This could be because in construction projects, organisations might have to work with new partner firms all the time, in such cases they will not be familiar with the partner firm and trust will have to be built in the relationship. Item 14 poses a statement that implies organisations make efforts to build trust throughout the duration of project. For this item, 47.8% of the respondents feel that it is likely

their organisations indeed try to strengthen the trust with their partners during projects. The detailed results for these 3 items are as shown in the following Table 6.5 below.

Table 6.5: Detailed result for items corresponding to Trust factor

Item No		Responses					Total	Standard deviation
		Strongly disagree / Very unlikely	Disagree / Unlikely	Not sure	Agree / Likely	Strongly agree / Very likely		
Q12	Frequency	-	17	5	26	21	69	1.146
	Percentage	-	24.6	7.2	37.7	30.4	100	
Q13	Frequency	5	21	12	28	3	69	1.084
	Percentage	7.2	30.4	17.4	40.6	4.3	100	
Q14	Frequency	6	5	19	34	5	69	1.030
	Percentage	8.8	7.2	29.0	47.8	7.2	100	

It can be seen from the results that organisations in Malaysian construction industry places high importance on trust which should enable them to work harmoniously in a partnering relationship. This also reflects that that although the respondents feel they would prefer to work with a firm which they are familiar with and trust, they also understand that sometimes they have to work with a new partner, as that is the nature of business in the construction industry.

iii. Procurement (Items 15 – 17)

The third partnering factor tested in the questionnaire survey is procurement. An important trait of partnering is flexible procurement, as opposed to the conventional tendering system. The respondents are given statements regarding flexible procurement and their organisation experience in it. Items included for this partnering factor are items 15, 16 and 17. In item 15, the respondents are given a statement whether they think their organisation will engage in flexible procurement system whenever possible. More than half of the respondents (53.5%) think it is likely that their organisation would engage in flexible procurement system given the chance. The next item (item 16) tested this statement in an opposite manner, by giving the respondent a statement that indicate their organisation restrict to fixed type of procurement unless they are required otherwise. As expected, 42.1% of the respondents agree that their organisation practices in projects are restricted to fixed

procurement type. For item 17, the majority of respondents (60.9%) agree that their organisation will comply with client's choice for method of procurement most of the time. This could be due to the fact that client are primarily the paymaster in construction projects in Malaysia. The results for these 3 items can be seen in Table 6.6 below.

Table 6.6: Detailed result for items corresponding to Procurement factor

Item No		Responses					Total	Standard deviation
		Strongly disagree / Very unlikely	Disagree / Unlikely	Not sure	Agree / Likely	Strongly agree / Very likely		
Q15	Frequency	6	5	15	37	6	69	1.051
	Percentage	8.8	7.2	21.7	53.5	8.8	100	
Q16	Frequency	-	14	11	29	15	69	1.041
	Percentage	-	20.3	15.9	42.1	21.7	100	
Q17	Frequency	-	7	9	42	11	69	.850
	Percentage	-	10.1	13.1	60.9	15.9	100	

The results reflected that although Malaysian construction industry is embracing the non-conventional methods of procurement, there is a significant group of firms who are quite happy carrying on with traditional methods of procurement. For this group, the hassle of learning something new is much greater than coping with the rigid format of traditional methods of procurement. However it should be highlighted that most of the respondents agree if not strongly agree that client's choice is the way to go when it comes to selecting the procurement method.

iv. Communication (Items 18 – 19)

The fourth partnering factor being tested in the questionnaire is communication. The respondents are given 2 statements related to communication and their organisation's experience in construction projects in item 18 and 19. In item 18, the results show that 37.7% of the respondents indicate that it is likely their organisation will open all communications channels with other companies working together in construction projects. There are also, however some of the respondents who indicate otherwise (18.8% unlikely, 14.5% very unlikely) with the statement, indicating that to some

extent, limitation on communication channels still exist when working with other firms. The following Table 6.7 below display the detail results for items corresponding to Communication factor.

Table 6.7: Detailed result for items corresponding to Communication factor

Item No		Responses					Total	Standard deviation
		Very unlikely	Unlikely	Not sure	Likely	Very likely		
Q18	Frequency	10	13	18	26	2	69	1.105
	Percentage	14.5	18.8	26.1	37.7	2.9	100	
Q19	Frequency	12	15	4	31	7	69	1.337
	Percentage	17.4	21.8	5.8	44.9	10.1	100	

The next item (item 19) poses a statement to seek if construction organisations in Malaysia dedicate a specific team to communicate efficiently with other companies. In general, 55% of the respondents indicate positively their organisation set up a specific team for communicating with other companies (44.9% likely, 10.1 very likely). For the 39.2% of the respondents who feel otherwise, they could be working in an organisation with lesser employees, where all managerial and technical tasks are handled by the same people in the organisation. The results have shown that in terms of communication, the Malaysian construction industry is already on track to move towards partnering. The respondents have provided the results which imply that where communication is concerned, the construction organisations have no issue in dedicating a specific team for communication purposes, and will allow partner firms access to information which is required for the construction projects.

v. Tools

Tools are an essential element of partnering as they provide the necessary reinforcement throughout the partnering relationship. Common tools used for partnering process include workshops, meetings, partnering charter and partner feedback monitoring system. Some partnering relationships may develop their own specific tool better suited to monitor their partnering initiative and interests. Items 20 and 21 in the questionnaire are meant to seek the respondents view on what their organisation will do in terms of having specific tool to improve relationships with

other organisation that they are working with. In item 20, the respondents are asked to indicate their organisation experience in having regular workshops and meetings with other organisation to improve their working relationship. Most (40.6%) of the respondents have chosen to unlikely or very unlikely for this question, indicating that usage of any partnering tools are fairly uncommon amongst Malaysian construction organisations. This result reflects the findings in the interview data, which participants mentioned that they have never had any meetings or workshops that discuss anything other than their projects. There also comments from interview participants stating that as project contract periods are always rushed, they do not have any extra time to meet or manage their relationships with other firms. Unsurprisingly, similar results are also achieved in item 21, where most of the respondent thinks that it is unlikely (34.8%) or very unlikely (15.9%) with the statement that implies their organisation initiates the formulation of partnering charter and partnering feedback monitoring system. The results for items 20 and 21 describing partnering tools in this questionnaire survey can be seen in Tables 6.8 below.

Table 6.8: Detailed result for items corresponding to Tools factor

Item No		Responses					Total	Standard deviation
		Very unlikely	Unlikely	Not sure	Likely	Very likely		
Q20	Frequency	6	22	16	21	4	69	1.087
	Percentage	8.7	31.9	23.2	30.4	5.8	100	
Q21	Frequency	11	24	13	21	-	69	1.084
	Percentage	15.9	34.8	18.8	30.5	-	100	

The results for items 20 and 21 for this questionnaire clearly indicates that for partnering to be implemented in Malaysia, more efforts are needed in designing a framework to ensure that the partnering relationship can be monitored and improved by those involved. It will also be beneficial for educating the industry on tools such as partnering charter and feedback monitoring system to ensure that firms have the necessary knowledge to proceed with partnering when it is implemented in full.

vi. Commitment (Items 22 and 26)

Commitment is one of the pre-requisite for successful partnering. Gounaris (2005) defined commitment as the desire for continuity manifested by the willingness to

invest resources into a relationship. In the questionnaire survey, the respondents are given statements regarding commitment in working with other firms and their organisation experience with it in items 22 and 26. In item 22, majority of the respondents disagree (40.6%) and strongly disagree (21.7%) that their organisation will be committed to the companies they work with without any financial reasons. It is apparent that money is the motivating factor for a commitment to work with another firm. The similar response is also given in item 26, where 50.7% of the respondents feel that it is unlikely that their organisation would commit to a new company easily when working in construction projects. The detailed results for items 22 and 26 corresponding to Commitment factor are shown in the following Table 6.9.

Table 6.9: Detailed result for items corresponding to Commitment factor

Item No		Responses					Total	Standard deviation
		Strongly disagree / Very unlikely	Disagree / Unlikely	Not sure	Agree / Likely	Strongly agree / Very likely		
Q22	Frequency	15	28	12	12	2	69	1.101
	Percentage	21.7	40.6	17.4	17.4	2.9	100	
Q26	Frequency	11	35	15	8	-	69	.876
	Percentage	15.9	50.7	21.7	11.6	-	100	

This result is similar to the findings the researcher had obtained in the interview sessions, where participants feel that unless there is a financial gain in the equation, it is considerably hard for organisations to commit to one another. Based on the results, it is imperative that more effort is needed instilling awareness among Malaysian construction organisations the importance of commitment in partnering relationships. Perhaps educating the organisations could help in giving them better understanding of each other's role in construction projects, and therefore could increase their commitment to their partner firms.

vii. Policies (Items 23 – 24)

The construction industry is normally bounded by governmental policies and regulations. Governmental policies and regulations may affect the industry's receptiveness towards partnering. Policies as a partnering factor is tested in the questionnaire survey in items 23 and 24. Overall the results indicate that there is lack

of governmental policies and regulations to encourage the industry towards partnering. In item 23, majority (50.8%) of the respondents disagree that there are sufficient regulations to govern relationship among companies working together. This indicate that the governing body for the construction industry will have to formulate the necessary regulations to make sure that partnering is conducted in a right and ethical manner. Similar result is achieved with item 24, where 36.3% of the respondents disagree and 15.9% strongly disagree that there is enough support to encourage collaborative working with other companies. Detailed results for both items 23 and 24 relating to the Policies factor are shown in the following Table 6.10 below.

Table 6.10: Detailed result for items corresponding to Policies factor

Item No		Responses				Total	Standard deviation
		Strongly disagree	Disagree	Not sure	Agree		
Q23	Frequency	11	35	16	7	69	.856
	Percentage	15.9	50.8	23.2	10.1	100	
Q24	Frequency	11	25	22	11	69	.994
	Percentage	15.9	36.3	31.9	15.9	100	

It should also be highlighted the significant amount of respondents who answered 'not sure'; amounting to 23.2% in item 22, and 31.9% in item 23. This substantial percentage reflects the degree of knowledge regarding regulation and support for collaborative working amongst the respondents, who are professionals currently working in Malaysian construction industry. The authorities and bodies governing the construction industry should take into consideration of how the construction workforce should be educated and informed in regards to new methods or practices which can be implemented in Malaysia, for the sake of improving the industry.

viii. Culture (Items 25, 27 and 28)

The nature of construction industry where different organizations come together in a project has contributed in organizations having to adjust one another's culture when working together. Culture is a vital element of construction partnering as it affects the way partners behave around each other. There are 3 items which are tested for the

culture factor in relation to partnering in the questionnaire survey, namely items 25, 27and 28. The findings in the interview session are mirrored in the questionnaire finding for item 25 where 50.7% of the respondents agree and 21.7% strongly agree that they prefer companies who share the similar organizational culture and work ethics when choosing partners. In adapting to a different organisational culture other than their own, majority of the respondents negatively (very unlikely – 21.7% and unlikely – 42.1%) indicate that they would not be able to adapt easily, as shown in results for item 27. In relation to this, the next item, item 28 is a statement that implies organisations may need extra efforts in order to be in sync with other companies. A significant percentage of the respondents (85.5%) has indicate positively with this statement, which means that their organisation will require extra efforts to synchronise themselves with other companies in a working relationship. The detailed results for items pertaining to the Culture factor is as shown in the following Table 6.11 below.

Table 6.11: Detailed result for items corresponding to Culture factor

Item No		Responses					Total	Standard deviation
		Strongly disagree / Very unlikely	Disagree / Unlikely	Not sure	Agree / Likely	Strongly agree / Very likely		
Q25	Frequency	-	11	8	35	15	69	.907
	Percentage	-	15.9	11.6	50.7	21.7	100	
Q27	Frequency	15	29	19	6	-	69	.894
	Percentage	21.7	42.1	27.5	8.7	-	100	
Q28	Frequency	-	5	5	35	24	69	.839
	Percentage	-	7.2	7.2	50.7	34.8	100	

The results for these items clearly indicate that in terms of culture, there are plenty of things that need to be considered if Malaysian construction industry is moving towards partnering. As organizational culture is unique from one organisation to another, special attention must be given to formulate a framework which will assist organisations in construction industry when adapting to a different organisational culture in any partnering relationship.

This section has discussed the frequency distribution of the responses from the questionnaire according to the partnering enabling factors as previously highlighted in Chapter 2 of this thesis.Initial quantitative findings from this section indicate that the partnering enabling

factors of Culture, Policies, Commitment and Tools are yet to be developed in Malaysia, while the enabling factors of Collaboration & cooperation, Communication, Procurement and Trust are already present within the Malaysian construction industry. The following sections shall examine the response interdependence between the respondents profile and the items in Section II of the questionnaire through chi-square and Kruskal-Wallis analysis.

b. CHI-SQUARE ANALYSIS

This section examines whether the responses given by the respondents in the questionnaire are the product of respondent's choice or are products of chance. Due to the non-normality of data as mentioned in Section 6.2.1 and Appendix 3 of this thesis, non-parametric tests are chosen as for analysis as it is less restrictive compared to their parametric counterparts with regards to type of data and other assumptions. A chi-square test is conducted to explore the relationship of the categorical variables (Pallant, 2011). In this non-parametric chi-square analysis, the null hypothesis is set that the responses were given at random, there are no relationships between two phenomena and the confidence level is set at 95%. The *p*-value in the chi-square analysis is defined as the probability of obtaining a test statistic at least as extreme as the one that was actually observed, assuming that the null hypothesis is true (Goodman, 1999). In this analysis, for *p*-values less than 0.05, the null hypothesis is rejected and confidence is gained in the hypothesis that the results are valid and are in some way related (Field, 2009). The following Table 6.12 shows the significance levels for all items in Section II of the questionnaire.

Table 6.12: Significance level (*p*) of responses to Items 10 – 28 in the questionnaire

Item No	Tested items (Labeled according to theme of questions)	Chi-square	Significance, *p*
Q10	Collaborative working	28.783	.000
Q11	Cooperative relationship in and out of projects	9.478	.009
Q12	Allow information exchange	13.957	.003
Q13	Familiar and trusted partners only	30.493	.000
Q14	Trust-building efforts in projects	45.130	.000
Q15	Engage in flexible procurements	53.536	.000
Q16	Restrict to fixed type procurements	11.174	.011
Q17	Comply with client procurement choice	43.870	.000
Q18	Open communication channels	28.464	.000
Q19	Specific team for communication	32.087	.000
Q20	Partnering related workshop and meetings	19.478	.001
Q21	Formulation of partnering tools	6.768	.080
Q22	Financial free commitments	25.275	.000
Q23	Regulation for partnering	26.710	.000
Q24	Support for partnering	7.348	.062
Q25	Similarity in culture and work ethics	25.783	.000
Q26	Ease of commitment to new partners	25.783	.000
Q27	Ease of culture adaptation	15.812	.001
Q28	Extra efforts for synchronisation	38.304	.000

For $p > 0.05$, the null hypothesis is true that all scores are given at random for all tested items, except for items 'Formulation of partnering tools' and 'Support for partnering' which implies that these scores are given at random. These 2 items are excluded before conducting the ANOVA test with respondent's profile.

c. KRUSKAL-WALLIS ANALYSIS

This section investigates the contributory factors which facilitate the responses given in the questionnaire survey by conducting a non-parametric test named Kruskal-Wallis ANOVA. The Kruskal-Wallis test is most commonly used when there is one nominal variable and one measurement variable, and the measurement variable does not normality assumption of an anova (McDonald, 2009). It is the non-parametric analogue of a one-way ANOVA test. This test is appropriate for use in this research, as it is suited for data that were not normally distributed. The main purpose of the test is to identify if the responses given by the respondents are influenced by their background.

In this analysis, the respondent profile is used as the independent variable and the responses analysed are used as the dependent variable. The independent variables selected for this

analysis are age of respondents (age), management level (mgt level), years of experience (experience), years in current organisation (current organisation) and nature of business (type of firm). The following Table 6.13 shows the results for this analysis, where significance P values highlighted in yellow (less than 0.05) indicates that the respondent's answers for the respective questions are influenced by some aspects of their background.

Table 6.13: Kruskal-Wallis ANOVA analysis for Section II

Item No	Tested items (Labeled according to theme of questions)	RESPONDENT PROFILE				
		Age	Mgt level	Experience	Current organisation	Type of firm
Q10	Collaborative working	.000	.019	.018	.003	.648
Q11	Cooperative relationship in and out of projects	.567	.507	.550	.964	.011
Q12	Allow information exchange	.002	.315	.057	.091	.438
Q13	Familiar and trusted partners only	.013	.208	.048	.506	.210
Q14	Trust-building efforts in projects	.000	.134	.234	.358	.004
Q15	Engage in flexible procurements	.001	.253	.260	.376	.018
Q16	Restrict to fixed type procurements	.043	.599	.085	.003	.017
Q17	Comply with client procurement choice	.000	.018	.250	.023	.001
Q18	Open communication channels	.001	.982	.546	.105	.166
Q19	Specific team for communication	.004	.049	.014	.009	.001
Q20	Partnering related workshop and meetings	.329	.334	.096	.441	.022
Q22	Financial free commitments	.024	.490	.030	.008	.000
Q23	Regulation for partnering	.000	.109	.031	.005	.002
Q25	Similarity in culture and work ethics	.041	.106	.139	.086	.027
Q26	Ease of commitment to new partners	.580	.538	.060	.220	.638
Q27	Ease of culture adaptation	.139	.111	.230	.296	.613
Q28	Extra efforts for synchronisation	.285	.680	.685	.760	.090

There are however, parts of the results that were not influenced by the respondent's background as indicated by significance P value more than 0.05. Results also show that the responses for items 26, 27 and 28 are not affected by any of the parameters from respondent's profile. Apart from that, the results also shows that ages of the respondents highly influence the responses for most of the items, except items describing 'cooperative relationship in and out of projects' and 'partnering related workshop and meetings'. Another parameter which highly influence the responses is the respondent's type of firm, which indicates significance in all items except items describing 'collaborative working', 'allow information exchange', 'familiar and trusted partners only' and 'open communication channels'. It should also be

noted that in the results for item describing ‘specific team for communication’ is influenced by all of the respondents profile parameters.

The Kruskal-Wallis analysis also indicates that the respondent’s choice for ‘collaborative working’, and ‘compliance with client procurement choice’ is dependent on the respondent’s management level. The experience of the respondents contributes to their choices regarding ‘collaborative working’, working with ‘familiar and trusted partners only’, ‘financial free commitments’ and ‘regulation for partnering’. The number of years that the respondents work in their current organisation has some significance in their response regarding ‘collaborative working’, ‘restrict to fixed type procurements’ compliance with client procurement choice’, financial free commitments, and regulation for partnering.

d. CROSS-TABULATION OF RESULTS

In order to investigate the pattern of responses given by the sample, cross-tabulation analysis of the data according to a specific respondent’s profile is conducted.

- ***Age of respondents*** - In reference to the previous section, the results from the Kruskall-Wallis analysis which had shown significance were extracted and cross-tabulated according to the enabling partnering factors and the age of respondents. The following Table 6.14 displays the responses received from the sample when asked of various partnering enablers as experienced by them in their own organization.

Table 6.14: Cross-tabulation of enabling factors and respondents' age category

Enabling factor	Item ID	Theme of questions	Responses	Age category (in years)			
				20 - 24	25 - 34	35 - 44	45 - 54
Collaboration & cooperation	Q10	Collaborative working	Strongly Disagree / Very unlikely	-	-	-	-
			Disagree / Unlikely	-	-	-	-
			Not sure	-	9	2	-
			Agree / Likely	9	24	1	11
			Strongly agree / Very Likely	-	-	9	4
Trust	Q12	Allow information exchange	Strongly Disagree / Very unlikely	6	-	-	-
			Disagree / Unlikely	-	-	-	-
			Not sure	1	15	12	13
			Agree / Likely	2	18	-	2
			Strongly agree / Very Likely	-	-	-	-
	Q13	Familiar and trusted partners only	Strongly Disagree / Very unlikely	-	-	-	-
			Disagree / Unlikely	-	4	-	1
			Not sure	2	23	7	10
			Agree / Likely	6	6	5	2
			Strongly agree / Very Likely	1	-	-	2
	Q14	Trust-building efforts in projects	Strongly Disagree / Very unlikely	6	-	-	-
			Disagree / Unlikely	-	-	-	-
			Not sure	1	10	11	10
			Agree / Likely	2	19	1	-
			Strongly agree / Very Likely	-	4	-	5
Procurement	Q15	Engage in flexible procurements	Strongly Disagree / Very unlikely	6	-	-	-
			Disagree / Unlikely	-	-	5	-
			Not sure	2	22	7	8
			Agree / Likely	1	11	-	5
			Strongly agree / Very Likely	-	-	-	2
	Q16	Restrict to fixed type procurements	Strongly Disagree / Very unlikely	-	-	-	-
			Disagree / Unlikely	-	-	-	4
			Not sure	3	21	7	8
			Agree / Likely	6	12	-	3
			Strongly agree / Very Likely	-	-	5	-
	Q17	Comply with client procurement choice	Strongly Disagree / Very unlikely	-	-	-	-
			Disagree / Unlikely	-	-	-	-
			Not sure	1	10	1	5
			Agree / Likely	2	23	6	10
			Strongly agree / Very Likely	6	-	5	-
Communication	Q18	Open communication channels	Strongly Disagree / Very unlikely	-	-	-	-
			Disagree / Unlikely	6	-	4	-
			Not sure	-	14	7	12
			Agree / Likely	3	19	1	1
			Strongly agree / Very Likely	-	-	-	2
	Q19	Specific team for communication	Strongly Disagree / Very unlikely	6	5	-	1
			Disagree / Unlikely	2	12	1	-
			Not sure	-	1	11	5
			Agree / Likely	-	7	-	8
			Strongly agree / Very Likely	1	8	-	1
Commitment	Q22	Financial free commitments	Strongly Disagree / Very unlikely	-	-	-	-
			Disagree / Unlikely	-	5	5	1
			Not sure	9	21	7	7
			Agree / Likely	-	6	-	6
			Strongly agree / Very Likely	-	1	-	1
Policy	Q23	Regulation for partnering	Strongly Disagree / Very unlikely	6	-	5	-
			Disagree / Unlikely	-	7	-	1
			Not sure	2	26	7	8
			Agree / Likely	1	-	-	6
			Strongly agree / Very Likely	-	-	-	-
Culture	Q25	Similarity in culture and work ethics	Strongly Disagree / Very unlikely	-	-	-	-
			Disagree / Unlikely	-	3	-	-
			Not sure	8	26	12	8
			Agree / Likely	1	4	-	7
			Strongly agree / Very Likely	-	-	-	-

From this table it can be seen that in certain enabling factors of partnering, the patterns of respondent choices in the survey are visible. In terms of trust (Items Q12 & Q14), it can be seen that the more 'senior' respondents appears to have a higher degree of trust, as compared to their 'junior' counterparts. This could be due the more senior respondent having more experience and perhaps a higher autonomy in decision making due to them serving longer in the industry, are able to discern the areas in which trust is important in working with other parties.

Similar pattern could be seen for answers relating to communication factor (items Q18 & Q19), which implies that the younger respondents are much more reluctant to communicate with parties external to their organization as compare to the older respondents. In the commitment factor (item Q22) it showed that the respondents are all generally unsure or disagree with the notion of financial-free commitments among partners. Only a minimal number of respondents, who are in the more senior age group feels that financial-free commitments are possible, as this group of respondents could have fostered their own network among other construction firms from their time working in the industry. This could reflect that in the Malaysian construction industry, commitment beyond financial interest are difficult to achieve, and could dampen partnering efforts within the construction industry; unless the partnering relationship is implemented among firms which principals are familiar with each other.

The results for the culture factor (item Q25) indicate that half of the respondents in the most senior category believed that similarities in culture and work ethics are important for partnering. This belief however is not shared by the younger respondents as most of them answered 'not sure' for this item. This reflects that the suitable culture for partnering is not clearly defined within the industry, as only the more senior respondents were able to justify its importance in partnering.

- ***Management Level***–The management level in the questionnaire survey segregates the respondents into three groups, namely the top management, middle management and the employees. The results from the Kruskal-Wallis test were further explored to investigate the patterns of responses given by the sample according to their managerial level. The result from the cross-tabulation analysis is as shown in the following Table 6.15.

Table 6.15: Cross-tabulation of enabling factors and respondents' management levels

Enabling factor	Item ID	Theme of questions	Responses	Management Levels		
				Top	Middle	Employee
Commitment	Q10	Collaborative working	Strongly Disagree / Very unlikely	-	-	-
			Disagree / Unlikely	-	-	-
			Not sure	5	4	11
			Agree / Likely	6	15	17
			Strongly agree / Very Likely	-	5	6
Procurement	Q17	Comply with client procurement choice	Strongly Disagree / Very unlikely	-	-	-
			Disagree / Unlikely	-	-	-
			Not sure	5	1	11
			Agree / Likely	6	18	17
			Strongly agree / Very Likely	-	5	6
Communication	Q19	Specific team for communication	Strongly Disagree / Very unlikely	1	-	11
			Disagree / Unlikely	-	5	10
			Not sure	5	11	1
			Agree / Likely	4	8	3
			Strongly agree / Very Likely	1	-	9

Higher managerial levels translates into higher autonomy and decision making, and therefore affects the responses given by the sample in certain issues regarding partnering. For instance, in reference to the communication factor (item Q19), respondents from the top management had agreed with the necessity of having a specific team for communicating within the partnering relationship, whereas the middle managers and employees were mainly unsure if not disagree with the need for a designated team for communicating. This could be due to the top management having the authority of enacting the specific division for communication purposes which decisions may not be applicable to the lower managerial groups.

- ***Experience*** – Apart from their age, the industrial experiences of the respondent also contribute to their opinions in regards to partnering factors which exist in the industry. There exist differing opinions between respondents who are new in the industry as well as the ones who have been actively working for a number of years. The following table 6.16 displays the cross-tabulation of the significant results from Kruskal-Wallis analysis according to the industrial experience of the respondents.

Table 6.16: Cross-tabulation of enabling factors and respondents' industrial experience

Enabling factor	Item ID	Theme of questions	Responses	Industrial experience (in years)				
				0 - 5	6 - 10	11 - 15	16 - 20	> 20
Collaboration & cooperation	Q10	Collaborative working	Strongly Disagree / Very unlikely	-	-	-	-	-
			Disagree / Unlikely	-	-	-	-	-
			Not sure	5	-	4	2	-
			Agree / Likely	26	7	-	3	8
			Strongly agree / Very Likely	-	3	6	-	4
Trust	Q13	Familiar and trusted partners only	Strongly Disagree / Very unlikely	-	-	-	-	-
			Disagree / Unlikely	4	-	-	-	1
			Not sure	18	10	2	4	8
			Agree / Likely	8	-	8	1	2
			Strongly agree / Very Likely	1	-	-	-	2
Communication	Q19	Specific team for communication	Strongly Disagree / Very unlikely	11	-	-	-	1
			Disagree / Unlikely	10	4	-	1	-
			Not sure	1	3	6	2	6
			Agree / Likely	3	-	4	2	6
			Strongly agree / Very Likely	6	3	-	-	-
Commitment	Q22	Financial free commitments	Strongly Disagree / Very unlikely	-	-	-	-	-
			Disagree / Unlikely	5	3	2	-	1
			Not sure	19	7	8	3	7
			Agree / Likely	6	-	-	2	4
			Strongly agree / Very Likely	1	-	-	-	1
Policy	Q23	Regulation for partnering	Strongly Disagree / Very unlikely	6	3	2	-	-
			Disagree / Unlikely	7	-	-	-	1
			Not sure	17	7	8	3	8
			Agree / Likely	1	-	-	2	4
			Strongly agree / Very Likely	-	-	-	-	-

The cross-tabulation has revealed that in terms of the policy factor, the respondents who are far less experienced has indicated that there isn't enough regulations in terms of partnering to promote successful implementation of partnering. The less experienced respondents are likely to be younger and recent graduates, who have been exposed to numerous new innovative practices in procurement such as partnering during their recent training, thus enabling them to be more adept and aware with new regulations and guidelines in the construction industry.

- ***Current organization*** – The number of years the respondent were also recorded in the questionnaire survey to determine if current or most recent organization influences the respondents decisions on partnering enablers. The following Table 6.17 shows the responses from the sample according to their number of years in current organization, in the selected items found to be significant through the Kruskal-Wallis test.

Table 6.17: Cross-tabulation of enabling factors and respondents' years in current organization

Enabling factor	Item ID	Theme of questions	Responses	Years in current organization		
				0 - 5	6 - 10	11 - 15
Collaboration & cooperation	Q10	Collaborative working	Strongly Disagree / Very unlikely	-	-	-
			Disagree / Unlikely	-	-	-
			Not sure	5	2	1
			Agree / Likely	27	9	8
			Strongly agree / Very Likely	6	7	5
Procurement	Q16	Restrict to fixed type procurements	Strongly Disagree / Very unlikely	-	-	-
			Disagree / Unlikely	-	2	2
			Not sure	20	10	9
			Agree / Likely	12	6	3
			Strongly agree / Very Likely	5	-	-
	Q17	Comply with client procurement choice	Strongly Disagree / Very unlikely	-	-	-
			Disagree / Unlikely	-	-	-
			Not sure	9	3	5
			Agree / Likely	17	15	9
			Strongly agree / Very Likely	11	-	-
Communication	Q19	Specific team for communication	Strongly Disagree / Very unlikely	11	-	1
			Disagree / Unlikely	8	5	-
			Not sure	6	4	7
			Agree / Likely	3	6	6
			Strongly agree / Very Likely	7	3	-
Commitment	Q22	Financial free commitments	Strongly Disagree / Very unlikely	-	-	-
			Disagree / Unlikely	10	-	1
			Not sure	20	13	11
			Agree / Likely	6	5	1
			Strongly agree / Very Likely	1	-	1
Policy	Q23	Regulation for partnering	Strongly Disagree / Very unlikely	11	-	-
			Disagree / Unlikely	7	-	1
			Not sure	18	16	9
			Agree / Likely	1	2	4
			Strongly agree / Very Likely	-	-	-

The results further indicate in terms of the Communication factor (item Q19), similar distribution of responses is achieved, where the junior respondents or, in this case the respondents who have been working in their organization for less than 5 years, feels that there is a lack of specific team dedicated to handling the communication among partnering parties. Same results can also be observed in the Commitment factor in where most respondents who are new to the organization feel that it is unlikely that a firm would venture into partnering with financial-free commitments, contrary to the belief of the respondents who has been working for some time in the organization.

- ***Type of firm*** – In order to understand the various perspective of the practitioners within the Malaysian construction industry, the respondents were also selected from firms with various expertise. The types of firms within the sample consist of contractors, consultants, architects, developers and the manufacturers. The distribution of responses for significant Kruskal-Wallis tests according to the type of firm is shown in Table 6.18 below.

Table 6.18: Cross-tabulation of enabling factors and respondents' type of firm

Enabling factor	Item ID	Theme of questions	Responses	Type of firm				
				Contract.	Consult.	Develop.	Architect	Mfg.
Collaboration & cooperation	Q11	Cooperative relationship in and out of projects	Strongly Disagree / Very unlikely	-	-	-	-	-
			Disagree / Unlikely	-	-	-	-	-
			Not sure	13	12	8	1	1
			Agree / Likely	4	7	10	4	2
			Strongly agree / Very Likely	-	1	-	1	5
Trust	Q14	Trust-building efforts in projects	Strongly Disagree / Very unlikely	5	-	1	-	-
			Disagree / Unlikely	-	-	-	-	-
			Not sure	7	11	8	3	3
			Agree / Likely	4	8	8	1	1
			Strongly agree / Very Likely	1	1	1	2	4
Procurement	Q15	Engage in flexible procurements	Strongly Disagree / Very unlikely	5	-	1	-	-
			Disagree / Unlikely	4	-	1	-	-
			Not sure	7	13	13	2	4
			Agree / Likely	-	6	3	4	4
			Strongly agree / Very Likely	1	1	-	-	-
	Q16	Restrict to fixed type of procurements	Strongly Disagree / Very unlikely	-	-	-	-	-
			Disagree / Unlikely	-	2	-	2	-
			Not sure	5	16	9	3	6
			Agree / Likely	8	2	8	1	2
			Strongly agree / Very Likely	4	-	1	-	-
	Q17	Comply with client's procurement choice	Strongly Disagree / Very unlikely	-	-	-	-	-
			Disagree / Unlikely	-	-	-	-	-
			Not sure	2	9	3	1	2
			Agree / Likely	6	11	13	5	6
			Strongly agree / Very Likely	9	-	2	-	-
Communication	Q19	Specific team for communication	Strongly Disagree / Very unlikely	7	1	4	-	-
			Disagree / Unlikely	4	5	5	-	1
			Not sure	5	6	4	2	-
			Agree / Likely	1	7	3	3	1
			Strongly agree / Very Likely	-	1	2	1	6
Tools	Q20	Partnering related workshop and meetings	Strongly Disagree / Very unlikely	2	1	3	-	-
			Disagree / Unlikely	2	2	4	-	-
			Not sure	11	11	6	2	2
			Agree / Likely	2	4	5	2	6
			Strongly agree / Very Likely	-	2	-	2	-
Commitment	Q22	Financial free commitments	Strongly Disagree / Very unlikely	-	-	-	-	-
			Disagree / Unlikely	6	1	4	-	-
			Not sure	11	14	13	2	4
			Agree / Likely	-	5	1	3	3
			Strongly agree / Very Likely	-	-	-	1	1
Policy	Q23	Regulation for partnering	Strongly Disagree / Very unlikely	9	-	2	-	-
			Disagree / Unlikely	3	1	4	-	-
			Not sure	4	15	12	4	8
			Agree / Likely	1	4	-	2	-
			Strongly agree / Very Likely	-	-	-	-	-
Culture	Q25	Similarity in culture and work ethics	Strongly Disagree / Very unlikely	-	-	-	-	-
			Disagree / Unlikely	-	3	-	-	-
			Not sure	17	14	17	2	4
			Agree / Likely	-	3	1	4	4
			Strongly agree / Very Likely	-	-	-	-	-

In the factor of Procurement (Q15), the results of cross-tabulation analysis has highlighted the type of firm with some reservations to engage in flexible procurement; the contractors and the developers. This could be attributed to the nature of business of these firms, where flexible procurement does not place extra importance on the contractor and developer, as a standard Design and Build tender would, thus implying loss of control should flexible procurement is imposed through partnering. The same reluctance could also be sensed in the Tools factor (item Q20) where the contractors and developers appears to be hesitant in putting efforts toward the establishment to routine partnering tools within their daily activities.

This section has described in detail the results gained through the Kruskal-Wallis test and the cross-tabulations according to the respondents' profile had provided justification for the results obtained. Next the strength of the relationship between each partnering enabler factor shall be determined, through the use of Pearson's correlation test. This test will investigate the link between each enabler as proposed by the literature review in Chapter 2 or the qualitative findings in Chapter 5.

e. PEARSON'S CORRELATION COEFFICIENT, *r*

In order to determine the intensity of linear relationship between two variables, correlation analysis is conducted on the questionnaire data. Pearson's correlation coefficient, r is the measurement of linear relationship between two variables in terms of strength of the relationship (Pallant, 2011). This test is conducted on the data from Section II of the questionnaire, and the items are categorized according to their corresponding partnering factor. These categories of items are then tested against each other, to determine if there is any correlation between partnering factors and specifically investigate if one response predicts the other. Pearson's r has values ranging from -1 for perfectly negative relationships to +1 for perfectly positive relationship. According to Pallant (2011), a positive correlation indicates as one variable increases, so does the other. A negative correlation signifies that as one variable increases, the other decreases. A value of 0 indicates that there is no linear relationship.

i. Policy vs. Trust

The following Table 6.19 shows the linear relationships which are present between the policy and trust factor for partnering. The results indicate strong correlations between trust-building efforts in projects and both policy issues; regulation and support for partnering.

Table 6.19: Correlations between policy and trust factor

Decisions on		Trust		
		Allow information exchange	Familiar and trusted partners only	Trust-building efforts in projects
Policy	Regulation for partnering	0.269*	-0.025	0.568**
	Support for partnering	0.389**	-0.071	0.623**

***p=0.01, *p=0.05*

From the data analysis, it can be deduced that trust building efforts in construction projects can be improved by having partnering-customized regulations in place, as well as adequate support from the government agency who are the main policymakers in the Malaysian construction industry. Improving these policy issues could also potentially improve the level of trust among construction firms in allowing more transparent information exchange, as these items are also correlated with each other.

ii. Tools vs. Policy

The respondent's opinions on issues regarding partnering tools and partnering related policies are compared in the following Table 6.20. The results indicate that there are strong correlations between the use of partnering tools and policy.

Table 6.20: Correlations between tools and policy factor

Decisions on		Policy	
		Regulation for partnering	Support for partnering
Tools	Partnering related workshop and meetings	0.489**	0.076
	Formulation of partnering tools	0.680**	0.364**

***p=0.01, *p=0.05*

This reflects the importance of having partnering-customized regulations in place, as this will encourage the construction organisations to have partnering related workshop and meetings to improve the partnering relationship, as well as putting more effort into formulating partnering tools such as partnering feedback monitoring system to be applied during construction projects. There is also a strong correlation between support for partnering and formulation of partnering. Support in the forms of knowledge and expertise are essential in educating the industry to develop appropriate partnering tools to assist in monitoring the relationship and ensuring the success of the venture. The importance of educating the industry towards partnering and the necessity of support in terms of knowledge has also been highlighted by the practitioners, as revealed in the qualitative data analysis in the previous Chapter 5.

iii. Culture vs. Commitment

The relationship between culture and commitment related issues in partnering are explored next. As previously explored in Chapter 2, there is evidence in literature which indicates that continuous collaborative relationship not only indicates commitment between partners, but also will benefit the entire industry in developing positive culture which is essential for partnering success. The results from the analysis indicate that there are strong correlations between these two partnering factors in the Malaysian construction industry, as can be seen in Table 6.21 below.

Table 6.21: Correlations between culture and commitment factor

Decisions on		Commitment	
		Financial free commitments	Ease of commitment to new partners
Culture	Similarity in culture and work ethics	0.261*	-0.047
	Ease of culture adaptation	0.400**	0.439**
	Extra efforts for synchronisation	-0.343**	-0.412**

***p=0.01, *p=0.05*

From the results, it can be seen that the respondents feel that similarity in culture and work ethics and ease of culture adaptation can help foster financial free commitments

between organisations. Likewise, correlations indicate that the easier an organisation can adapt to a new culture, the easier they can commit to new partners. It should also be noted the inversely related issues of culture and commitment, specifically in needing extra efforts for synchronisation between partners.

iv. Procurement vs. Policy

The analysis conducted has resulted in very significant and strong correlations present between items regarding procurement and policy in partnering. This could be due to the fact that in Malaysia, the government is the biggest client for the construction industry as shown in the literature review. As government are the main policymakers for Malaysia, the government also possess a pivotal role in establishing policies related to procurement for partnering projects. This is also reflected in the results, where the respondents feel their organisations are more likely to engage in flexible procurements if there are partnering related regulations and partnering support in place. For the next two items in procurement, the respondents are asked to indicate the likeliness that they would restrict to fixed type procurements and whether they would comply with client procurement choice. The *r* values for correlation between procurement and policy are shown in the following Table 6.22.

Table 6.22: Correlations between procurement and policy factor

Decisions on		Policy	
		Regulation for partnering	Support for partnering
Procurement	Engage in flexible procurements	0.608**	0.517**
	Restrict to fixed type procurements	-0.485**	-0.268*
	Comply with client procurement choice	-0.347**	-0.412**

***p=0.01, *p=0.05*

The results indicate that these two items are negatively correlated with the two items in policy factor. This means that if there are partnering regulations and support for the construction industry, the organisations will not restrict to fixed type procurement and will be less likely to comply with client procurement choice all the time.

v. Communication vs. Trust

Chapter 2 of this thesis have highlighted that open and timely communication provides the basis of a sound partnering practice and will potentially avoid problems of mistrust among partners. Therefore it is important to determine if such assertions are valid within the context of this research. The following Table 6.23 indicates the linear relationships which are present between the communication and trust factor for partnering, as viewed by the Malaysian construction practitioners. Results displaythat there is indeed a strong correlation between organisations having open communication channels and trust other firm to allow information exchange. There is a negative correlation between open communication channels and familiar and trusted partners only, implying that if the organisation is more likely to work with familiar and trusted firms, and it is more unlikely that they have open communication channels. The *r* values for this correlation test can be seen in Table 6.23 below.

Table 6.23: Correlations between communication and trust factor

Decisions on		Trust		
		Allow information exchange	Familiar and trusted partners only	Trust-building efforts in projects
Communication	Open communication channels	0.456**	-0.270*	0.589**
	Specific team for communication	0.188	-0.134	0.382**

***p=0.01, *p=0.05*

The strong correlations between 'trust-building efforts in projects' and both items under the communication factor should also be highlighted. These positive correlations reflect that trust-building efforts in construction projects can be helped with organisations having open communication channels and dedicating specific team for project communication purposes.

vi. Culture vs. Tools

The relationship between culture and tools factor are explored next in the correlation analysis. Tools are identified as a crucial component in shaping the appropriate

culture in partnering, as noted previously in Chapter 2. The correlation tests conducted reveal significant correlations between all of the items tested, as can be seen in the following Table 6.24. The results imply that the preference to partner with firms which share similar culture and work ethics can be improved with the aid of partnering tools; such as partnering related workshops, meetings and partnering feedback monitoring system. Furthermore, it can also be concluded that the use of partnering tools can also assist with culture adaptation among firms in a partnering relationship, as results shows that these items are positively correlated.

Table 6.24: Correlations between culture and tools factor

Decisions on		Tools	
		Partnering related workshop and meetings	Formulation of partnering tools
Culture	Similarity in culture and work ethics	0.325**	0.354**
	Ease of culture adaptation	0.479**	0.407**
	Extra efforts for synchronisation	-0.260**	-0.238**

***p=0.01, *p=0.05*

There are also negative correlations between items describing the need for extra efforts for synchronisation with other firms and the partnering tools items. This indicates that the existence of partnering tools in the industry will reduce the effort required to synchronise with other firms in a partnering relationship. It can be further concluded that the use of partnering tools is essential in developing the suitable culture for partnering in the Malaysian construction industry.

This section has thoroughly described the analysis conducted on the quantitative data for Theme 1. The understanding of partnering concept among Malaysian construction professionals was explored in Section II of the questionnaire. Key findings from this section will be summarized at the end of the chapter. The next section will describe the analysis conducted for Theme 2, awareness of partnering practices.

6.4.2 AWARENESS OF PARTNERING PRACTICES (THEME 2)

Section III of the questionnaire survey is developed to identify the whether or not the respondents have an awareness of partnering practices other than what is happening in Malaysia. There are 3 items included under this theme; 2 items where respondents have to indicate their agreement on partnering awareness statements (Q29 and Q30) on 5-point Likert scale and 1 open ended question where respondents can provide their suggestion as how to implement partnering in Malaysia (Q31). The questions included in Section III of the questionnaire can be seen in the following table 6.25 below.

Table 6.25: Detail for the objective of questionnaire items and the questions in Section III.

Section	Objective	No	Questions
III	To know if the industry players are aware of partnering practices other than what is happening in Malaysia	29	The partnering practices in the UK construction industry are similar to the ones in Malaysia.
		30	The same partnering practices in the UK would be successful if applied in Malaysia.
		31	In your opinion, how can partnering be implemented in Malaysia?

a. FREQUENCY DISTRIBUTION OF RESPONSES

For questions 29 and 30, the respondents are given statements which imply partnering awareness and are instructed to indicate on a 5-point Likert scale whether they agree or not with the statement. The percentage of frequency distribution for the responses is as shown in Figure 6.9 below.

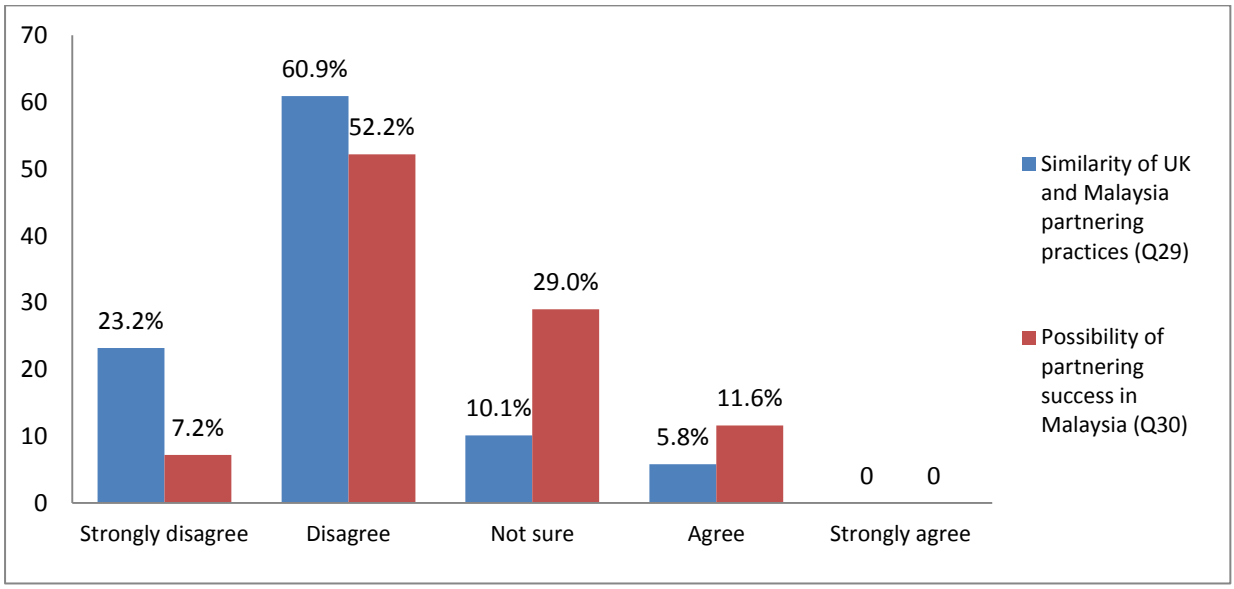


Figure 6.9: Frequency distribution of responses for questions in Section III of the questionnaire

It can be seen from the results that most of the respondents (60.9%) disagree that the UK partnering practices is similar to what is being practiced in Malaysia at present. Similar results are achieved in the next item, where most respondents (52.2%) disagree that the same partnering practices in the UK would be successful if implemented in Malaysia the way it is. Detailed results for these 2 items can be seen in the following table 6.26 below.

Table 6.26: Detailed result for items in Section III

Item No		Responses					Total	Standard deviation
		Strongly disagree	Disagree	Not sure	Agree	Strongly Agree		
Similarity of UK & Malaysia partnering practices (Q29)	Frequency	16	42	7	4	0	69	.757
	Percentage	23.2	60.9	10.1	5.8	0	100	
Possibility of UK partnering success in Malaysia (Q30)	Frequency	5	36	20	8	0	69	.796
	Percentage	7.2	52.2	29.0	11.6	0	100	

Item Q31 in the questionnaire gave the respondents an opportunity to give their opinion as to how partnering can be implemented in Malaysia. Although not all 69 respondents have chosen to include their opinion in the questionnaire, the few who actually gave their opinion have provided interesting insights. In general the responses highlighted the need for more knowledge and support in partnering, as mentioned by a respondent, ***"... the industry needs to be educated on the principles of partnering, as well as establishing a committee which can handle partnering related problems when it is implemented in the industry..."*** and the role of the government in monitoring partnering activities, as put by another respondent ***"the government must make sure there are proper laws enforced on partnering ventures, to ensure its flexibility is not misunderstood as a leeway to make profit."*** These responses are parallel to the responses given by the participants in the interview sessions, reflecting that these are among common issues as viewed by construction professionals, should the industry proceeds with partnering.

b. CHI-SQUARE ANALYSIS

The chi-square analysis, as mentioned previously, examines whether the responses given by the respondents for the 2 items in Section III (Q29 and Q30) are the results of respondent's choice or are due to chance. The non-parametric chi-square test is conducted to determine the

significance of the results. The null hypothesis is that the responses were given at random and the confidence level is set at 95%. For significance levels $p< 0.05$, the null hypothesis is rejected as this implies that the results are valid and not at random. The following Table 6.27 shows the significance levels for all items in Section III of the questionnaire.

Table 6.27: Significance level (*p*) of responses to Items 29-30 in Section III of the questionnaire

Item No	Tested items	Chi-square	Significance
Q29	Similarity of UK & Malaysia partnering practices	51.870	.000
Q30	Possibility of UK partnering success in Malaysia	34.478	.000

The results show that for significance level $p<0.05$, the null hypothesis can be rejected and the results obtained in Section III of the questionnaire are valid and the scores given by the respondent are not given in random.

c. KRUSKAL-WALLIS ANALYSIS

This section seeks to determine the contributory factors which influence the responses given in the questionnaire survey by conducting a non-parametric test named Kruskal-Wallis ANOVA. In this analysis, the respondent profile is used as the independent variable and the responses analysed are used as the dependent variable. The independent variables selected for this analysis are; age of respondents (age), management level (mgt level), years of experience (experience), years in current organisation (current organisation) and nature of business (type of firm). The results from the Kruskal-Wallis analysis are shown in Table 6.28 below.

Table 6.28: Kruskal-Wallis ANOVA analysis for Section III

Item No	Tested items	RESPONDENT PROFILE				
		Age	Mgt level	Experience	Current organisation	Type of firm
Q29	Similarity of UK & Malaysia partnering practices	.005	.272	.030	.100	.449
Q30	Possibility of UK partnering success in Malaysia	.084	.092	.013	.068	.622

It can be seen from the results that there are some dependence for the items tested and the profile of the respondents. The results indicate that respondent's age category and experience significantly influence their choice of answers when asked about the similarity of UK and

Malaysia partnering practices. The experience of respondents has also facilitated their choice of answers regarding the possibility of partnering success in Malaysia. This reflects that experience of construction professionals highly influence their perceptions on partnering success in Malaysia.

d. PEARSON'S CORRELATION COEFFICIENT, *r*

The next test in the quantitative data analysis is the test of correlation between the two measurable items in Section III of the questionnaire. In order to determine the intensity of linear relationship between two variables, correlation analysis is conducted on the questionnaire data. Pearson's correlation coefficient, r is the measurement of linear relationship between two variables. Pearson's r has values ranging from -1 for perfectly negative relationships to +1 for perfectly positive relationship. A value of 0 indicates that there is no linear relationship. The result for correlation test conducted between item Q29 and Q30 in Section III is as seen in the following table 6.29 below.

Table 6.29: Correlations between item Q29 and Q30 from Section III

Decisions on	Possibility of UK partnering success in Malaysia (Q30)
Similarity of UK & Malaysia partnering practices (Q29)	0.572**

***p=0.01, *p=0.05*

The results indicate that there is a significant and strong correlation between the decisions made by respondent in scoring the 2 items in Section III. Item Q29, 'Similarity of UK and Malaysia partnering practices' and item Q30 'Possibility of partnering success in Malaysia' has significant correlation between them, which reflects that the more similar partnering practices in UK and Malaysia, the higher the chance of possibility of UK based partnering practices in Malaysia. Although the Malaysian construction industry applies similar standards (British Standards) as the UK construction industry, the literature review in Chapter 3 of this thesis has revealed that the Malaysian industry is highly affected by the Malaysian's local culture in their daily activities. Reflecting on this finding as well as considering the analysis outcome, therefore it can be deduced that in order to ensure better chance of success in partnering implementation; the partnering practices applied should take into consideration the specific aspect of the Malaysian construction industry.

This section has elaborated on the tests undertaken for quantitative analysis of items in Section III of the questionnaire. Key findings from this Theme shall be summarized at the

end of this chapter. The next section shall describe the findings from Section IV and V of the questionnaire, with regards to organizational culture in Malaysian construction industry and how does culture affects partnering success.

6.5 ORGANIZATIONAL CULTURE IN MALAYSIAN CONSTRUCTION INDUSTRY

This section describes the findings from Section IV and Section V from the questionnaire survey. Section IV is geared at investigating the type of organizational culture and structure in construction organization in Malaysia (Theme 3), and Section V is designed to determine whether the current organizational culture is acting as an enabler or a barrier towards partnering in construction (Theme 4). As previously mentioned, these themes are parallel to the themes set out in the qualitative analysis, to simplify the process of data integration between qualitative and quantitative data in this research.

The discussion for this section will be according to the following order; the aim and objective for each theme, the allocation of questions under each theme, the frequency distribution for the responses, response interdependence which will be identified with non-parametric chi-square and Kruskal-Wallis tests and finally the correlation between items tested, which will be tested with Pearson's correlation test.

6.5.1 ORGANIZATIONAL CULTURE AND STRUCTURE IN MALAYSIAN CONSTRUCTION FIRMS (THEME 3)

Theme 3 of the quantitative data collection is embedded in Section IV of the questionnaire. This section aims in general to identify the type of organizational culture and structure of Malaysian construction firms. The findings in this section are crucial to provide a general idea of organizational culture type within the construction industry. There are 10 questions altogether included in Section IV of the questionnaire (Items Q32 – Q41). The distribution of questions and dimension tested are as shown in the following Table 6.30.

Table 6.30: Detail for the objective of questionnaire items and corresponding dimensions tested.

Section	Objective	No	Theme of questions
IV	To know the type of organizational culture and structure in construction organizations	32	What is the type of organizational culture in your firm?
		33	Client orientation
		34	Workforce orientation
		35	Leadership/management
		36	Outcome/performance orientation
		37	Reward orientation
		38	Innovation
		39	Teamwork
		40	What is the type of the organizational structure in your firm?
		41	Do you think this organizational structure is helping with partnering/working with other firms?

The following subsections will discuss the quantitative analysis conducted on these items from Section IV of the questionnaire.

a. FREQUENCY DISTRIBUTION OF RESPONSES

The first item of Section IV (Q32) asks the respondents to indicate the general type of their organizational culture in terms of flexibility vs. control, and inward focused vs. outward focused by selecting 1 of 4 generic types of organizational culture. The frequency distribution for this question is as seen in Table 6.31 below.

Table 6.31: Detailed result for item Q32, general type of organizational culture in Section IV

Item No		Responses				Total	Standard deviation
		Flexible & inward focused	Flexible & outward focused	Controlled & inward focused	Controlled & outward focus		
General type of organizational culture (Q32)	Frequency	18	38	11	2	69	1.092
	Percentage	55.1	26.1	15.9	2.9	100	

It can be seen from the results in Table 6.31 above, that flexible and inward focused culture is dominating generic organizational culture in Malaysian construction industry (55.1%), and the second largest (26.1%) response was from respondents in flexible and outward focused organizational culture. The flexible culture is dominating the Malaysian construction industry which is consistent with the fact that 90% of the organisations in Malaysian construction industry are from SME which is usually associated with more flexibility in their organizational culture due to the small size of their organization. Although mainly flexible, these firms have differing focus, inward focused implying that the employees welfare is put before the needs of the clients; while outward focused gave more importance in satisfying the

needs of the clients, rather than their employees. This finding is similar to the findings in the qualitative data analysis, where most of the participants relate the flexibility that is present in their organizational culture.

The next 7 items (Q33 – Q39) are designed to capture the specific type of organizational culture in construction firms. In these 7 items, respondents are asked to choose 1 of 4 statements which best describe their organisation under the known 7 dimensions of organizational culture as inspired by Cheung et al (2011); client orientation, workforce orientation, leadership/management, outcome/performance orientation, reward orientation, innovation and teamwork. Each of the 4 statements represents different type of culture namely; clan, adhocracy, hierarchy and market, with different levels of control and focus (Cameron and Quinn, 1999). Figure 6.10 below indicate the frequency of responses for items Q33 – Q39, describing specific types of organizational culture according to its 7 dimensions.

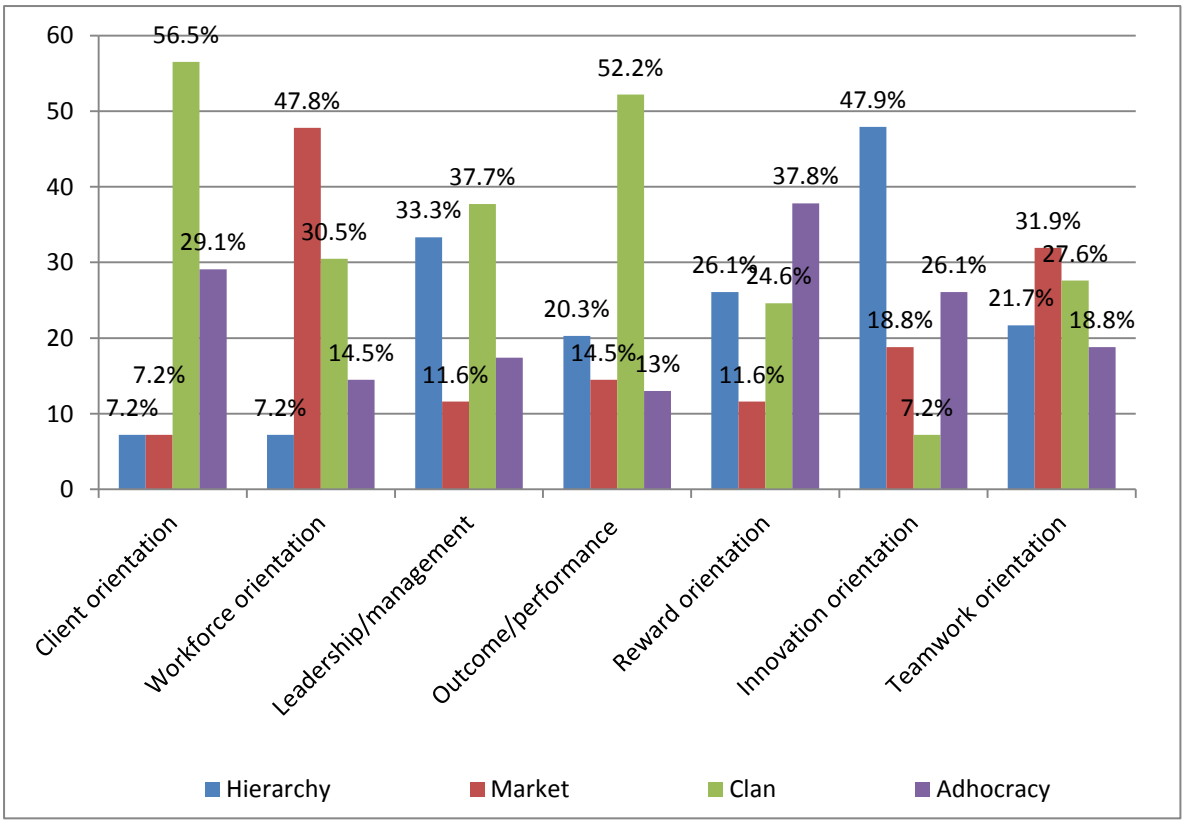


Figure 6.10: Frequency percentage for responses to Items Q33 - Q39 in section IV of the questionnaire.

The results for this frequency distribution will be discussed according to the 7 dimensions of organizational culture in the following sub-sections.

i. Client orientation

In terms of client orientation, 56.5% of the respondents feel that their organisation operates in Clan culture meaning that their organisation will try to accommodate the work procedure and culture of the client, but will never compensate employees' priorities in the process. This finding is parallel to the findings in the interviews conducted where 60% of the participants feel that their organizations put the employees' priorities before the clients. The second largest response (29.1%) for client orientation was for Adhocracy culture.

From the results shown in the previous Figure 3, it can be seen that in term of client orientation, Malaysian construction firms operates on more flexible culture basis (Clan and Adhocracy), with majority placing focus on employees first client next. This could due to the fact that most of firms operating in the construction industry are servicing companies, being paid for their services which made sense that they choose to be flexible in offering their services to the clients, based on the expertise they possess within the organization.

ii. Workforce orientation

From workforce orientation viewpoint, the results indicate that construction firms in Malaysia are more oriented towards the Market culture. Workforce orientation imply that employees ideas are valued, employees are encouraged to give input on major decisions and to some extent, are included in decision making. 47.8% of the respondents believe that their organisation maintains a very standard way of managing employees but will make adjustments to suit market needs if necessary. This implies the respondents are encouraged to contribute in giving ideas and decision making, but only where the matters of the client are involved.

There is also a significant percentage (30.5%) of the respondents who feel that in terms of workforce orientation, their organisation operates in Clan culture. For these respondents, their organisation could be placing high flexibility in managing employees and employees are encouraged to voice out their opinion whether it is

related to matters within the organisation or issues related to their clients. The high importance placed on workforce orientation whether it is for Market or Clan culture among construction firms in Malaysia shows how this industry is highly dependent on its skilled workforce in their businesses.

iii. Leadership/management

The respondents are also asked about the leadership/management in their current organisation. The leadership/management dimension pertains to how their organisation resolve internal problems effectively, the professionalism, the leadership, whether or not inter-departmental collaboration and information sharing are encouraged. In this dimension, majority (37.7%) of the respondents feel that their organisation operates in Clan culture. Within Clan culture, the organisation has a humane working environment, operates like families and values cohesion with high group commitment and loyalty. This finding is consistent with the findings from the interview session, where participants shared similar positive views regarding the management of their organisation. The results indicate that 33.3% of the respondents feel that their organisation operates in Hierarchy culture when it comes to leadership/management dimension. In Hierarchy culture, the leaders are deemed effective if they can organise, coordinate and monitor people and processes. This idealism of leaders is more prominent in organization that is more traditional with veteran generation (Baby Boomers generation, who are born during or post World War II) in the top management as implied by the study conducted by Gursoy et al (2008). The respondents who feel this way could be working with an organisation which is founded and led by a Boomer boss.

iv. Outcome / Performance orientation

Outcome/performance orientation in the context of organisational culture relates to the emphasis on good performance, an explicit set of performance standards and guidance for performance improvement in an organisation. Majority (52.2%) of the respondents believe that within the outcome/performance dimension, their organisation operates in Clan culture. This implies that the organisation has a flexible

performance measurement adjusted to current organisational achievement. If the organisation is doing well in their business, the performance measurement of the employees will be matched accordingly and vice versa.

This finding reflects the current reality of construction industry in Malaysia which is affected by the recent world economic crisis. As construction projects are usually tendered on contract basis, the amount of projects available will be affected by current economic situation in Malaysia. Construction firms are currently facing the decreasing amount of business as compared to before, and it is only fitting that the performance measurement for employees in construction firms are based on current organizational performance.

v. Reward orientation

The respondents are next asked of their organization's reward orientation. Within the context of organizational culture, reward orientation refers to emphasis on team accountability and rewards instead of punishment; equitable reward, trust atmosphere, performance based rewards, and recognition of member's performance. 37.8% of the respondent thought that their organization operates in Adhocracy culture when dealing with rewards for the employees. These organizations have a flexible reward system which is influenced by achieving the needs of the industry or clients.

Adhocracy culture is very popular in terms of reward orientation in construction firms as most of these firms operate on project based business, which payments may be received on irregular intervals. This is confirmed by the findings from the interview sessions, where participants commented on how rewards for the employees are usually given after receiving payment from clients, or upon project completion. Although it can be seen in the results that the Adhocracy culture has the most frequency, it should also be highlighted that there are almost equal amounts of respondents which feel that their organisation is operating on Hierarchy and Clan culture in terms of reward orientation. In Hierarchy culture, rewards are more seniority based, while in Clan culture, rewards are given collectively for the entire workforce.

vi. Innovation orientation

The construction industry is often criticised as being not innovative enough in embracing the speed of technology. Therefore it is relevant to identify the organisational culture of the construction industry by understanding the innovation orientation of these firms. Innovation orientation in the context of organisational culture refers to a number of characteristics such as; accepting adventurous ideas for sustaining competitiveness, welcoming alternative solutions, encouraging creative and innovative ideas, and finally allocating resources for implementing innovative ideas.

The criticism of lack in innovation among construction firms is reflected in the results for this question. In general, most of the respondents (47.9%) believed that in term of innovation orientation, their organisation operates in Hierarchy culture. In these organisations, creative and innovative procedures are very rare. Hierarchy culture is highly bureaucratic in nature, and ideas out of the ordinary may not be entertained or absorbed into daily business activities. Bureaucracy stifles creativity. This could be why the construction industry lacks serious effort in innovation, as innovation is not seen as something important in these organizations.

vii. Teamwork orientation

Teamwork orientation in the context of organisational culture relates to members commitment to the team, emphasis on team contributions, and amicable opinions and ideas exchange. The results indicate that most of the respondents feel that their organisation is operating on Market culture with issues related to teamwork orientation. 31.9% of the respondents are in an organisation which values teamwork and are focused on relationships, more specifically the transactions with industry.

Another significant group of respondents (27.6%) believe that their organisation operates on Clan culture when it comes to teamwork orientation. It should be highlighted the difference between these culture is that although Market culture values teamwork and the relationships of its members, this culture places higher importance on transactions with the industry (external focus) as compared to Clan

culture which put forward the relationships of the team members and teamwork within the organisation.

For the remaining 2 items in Section IV, the respondents are asked to indicate the type of organizational structure in their organization (item Q40) and whether the structure is beneficial when working with other organization in the construction industry (item Q41). Generally, the organizational structures in Malaysian construction firms are either divisional or project-based. The result for this item is shown in Table 6.32 below.

Table 6.32: Detailed result for item Q40 – Type of organizational structure

Item No		Responses			Total	Standard deviation
		Divisional	Project -based	Other		
Type of organizational structure (Q40)	Frequency	31	38	0	69	0.501
	Percentage	44.9	55.1	0	100	

It can be seen from the results in Table 6.32 that most (55.1%) of the organisations in Malaysian construction industry are practicing project-based organizational structure. This is common for construction industry, where tasks are project based with time limits, making it sensible to manage it by having teams within the organization working according to the projects obtained by the organization. For item Q41, the respondents have all (100%) answered that they feel their current organizational structure is not a barrier when working with other organizations in construction industry.

This section has thoroughly described the results for frequency distribution of responses obtained in Section IV of the questionnaire. The following sections shall examine the response interdependence between the respondents profile and the items in Section IV of the questionnaire through chi-square and Kruskal-Wallis analysis.

b. CHI-SQUARE ANALYSIS

This section examines whether the responses given by the respondents in the questionnaire are the product of respondent's choice or are products of chance, as described in the previous section 6.4.2. In order to determine this, a non-parametric chi-square test is conducted. Non-parametric test are chosen as for analysis as it is less restrictive compared to their parametric

counterparts with regards to type of data and other assumptions. The null hypothesis is that the responses were given at random and the confidence level is set at 95%. For significance levels $p< 0.05$, the null hypothesis is rejected as this implies that the results are valid and not at random. Table 6.33 below shows the significance levels for items regarding type of organizational culture in Section IV of the questionnaire.

Table 6.33: Significance level (*p*) of responses to Items 33 - 39 in the questionnaire

Item No	Tested items	Chi-square	Significance
Q33	Client orientation	45.261	.000
Q34	Workforce orientation	26.942	.000
Q35	Leadership / Management	12.913	.005
Q36	Outcome / Performance orientation	27.986	.000
Q37	Reward orientation	9.435	.024
Q38	Innovation orientation	24.159	.000
Q39	Teamwork orientation	2.826	.419

The result from the chi-square analysis as seen in Table 6.33 above indicates that for all items except 'teamwork orientation' (Q39) the null hypothesis can be rejected, which means that the scores were not given at random by the respondents and the results are valid. The non-parametric chi-square analysis conducted on these items yields significance level, $p<0.05$. As the significance level for item 'teamwork orientation' (Q39) is 0.419, this item is then excluded in the Kruskal- Wallis analysis for response interdependence.

c. KRUSKAL-WALLIS ANALYSIS

This section investigates the contributory factors which facilitate the responses given in the questionnaire survey by conducting a non-parametric test named Kruskal-Wallis ANOVA. This analysis has been described in Section 6.4.2. In this analysis, the respondent profile is used as the independent variable and the responses analysed are used as the dependent variable. The independent variables selected for this analysis are age of respondents (age), management level (mgt level), years of experience (experience), years in current organisation (current organisation) and nature of business (type of firm). The following Table 6.34 shows that in some cases respondent's answers are independent of their profile; however there is some dependence for some of the tested items.

Table 6.34: Kruskal-Wallis ANOVA analysis for Section IV

Item No	Tested items	RESPONDENT PROFILE				
		Age	Mgt level	Experience	Current organization	Type of firm
Q33	Client orientation	.001	.684	.495	.096	.011
Q34	Workforce orientation	.032	.058	.054	.000	.225
Q35	Leadership / Management	.001	.000	.004	.007	.856
Q36	Outcome / Performance orientation	.001	.000	.000	.001	.251
Q37	Reward orientation	.002	.005	.044	.005	.000
Q38	Innovation orientation	.159	.001	.002	.188	.100

Results indicate that the ages of respondents influenced their choice of answers in all of the organizational culture dimensions except for 'innovation orientation', which was only influenced by respondent's management level and experience. The respondent's management level and experience has significantly contributed to respondent's decision on items regarding 'leadership/management', 'outcome/performance orientation', 'reward orientation' and 'innovation orientation'. The results have also shown that all of the respondent's background profile has contributed to their answers regarding reward orientation. Apart from significance with 'reward orientation', the respondent's current organization also influenced their choice on items 'workforce orientation', 'leadership/management' and 'outcome/performance orientation'. Finally, it should also be noted that the respondent's type of firm have contribute to their choice with regards to 'client orientation and 'reward orientation'.

This section has discussed the significance and response interdependence of the responses given by the respondents. The next section will investigate the linear relationships, if any, between the items tested in Section IV through correlation analysis.

d. PEARSON'S CORRELATION COEFFICIENT, *r*

The main objective for Section IV in the questionnaire is to determine the type of organizational culture in Malaysian construction industry. Through the questionnaire findings, the type of organizational culture is determined from the perceptions of the respondents. Therefore it is important to investigate the existence of linear relationships, or correlation between the organizational culture dimensions and the profile of the respondents.

The Pearson correlation test (as described in Section 6.4.2) is conducted on the dimensions of organizational culture against the age, management level and type of firm. This is based on

the proposition that age of respondents may have an impact of their understanding of organizational culture, due to their experience and knowledge and the varying perceptions of organizational culture among different managerial levels in an organization. The type of firm variable is explored in the correlation analysis to investigate if there is any correlation between the type of firm and the cultural dimensions. This analysis is also done to specifically investigate if one response predicts the other. Pearson's r has values ranging from -1 for perfectly negative relationships to +1 for perfectly positive relationship. A value of 0 indicates that there is no linear relationship. The results for the correlation analysis for these variables are as shown in the following Table 6.35.

Table 6.35: Correlations between items Q33-Q39 against respondent profile

Decisions on	Respondent Profile		
	Age	Management level	Type of firm
Client orientation	0.104	-0.188	-0.251*
Workforce orientation	0.248*	-0.262*	0.106
Leadership/management	0.414**	-0.493**	0.016
Outcome/performance orientation	0.342**	-0.379**	0.054
Reward orientation	0.401**	-0.341**	0.025
Innovation orientation	0.275*	-0.481**	0.006
Teamwork orientation	0.386**	-0.517**	-0.034

***p=0.01, *p=0.05*

The results reflected that indeed there are strong correlations between the respondent's age and their choice of organizational culture dimension. This could be attributed to the number of years the respondent have spent as working adults, making those with older age having a different view of organizational culture compared to younger respondents, who has much less working experience. There are also strong correlations between the organizational culture dimensions and the respondent's management level, which reflects the varying perceptions of organizational culture for respondent in the top managerial level and the employees. It should be noted however, that there aren't many correlations in terms of respondent's type of firm and the dimensions of organizational culture, except for the client orientation dimension which is understandable, as the type of client may vary for different types of firm in the construction industry. In the remaining 6 dimensions, there seems to be no linear relationship detected, which can be concluded as the organizational culture in the construction industry are generally similar for all firms within the industry.

6.5.2 ROLE OF ORGANIZATIONAL CULTURE IN PARTNERING (THEME 4)

Theme 4 for quantitative data collection is tested in Section V of the questionnaire. The aim of this section is to determine the role of organizational culture in partnering, if it is acting as an enabler or a barrier towards partnering in construction. In total, there are 2 open ended questions (Items 42 – 43) provided in this section. The objectives and questions included in Section V of the questionnaire can be simplified in Table 6.36 below.

Table 6.36: Detail for the objective of questionnaire items and the questions in Section V.

Section	Objective	No	Questions
V	To know if current organizational culture is acting as an enabler or a barrier towards partnering in construction	42	In your opinion, do you think that organization culture affects partnering success?
		43	What can be done to improve the current organizational culture so that partnering will succeed?

It should be highlighted that although open ended questions gave a chance for the respondents to record their opinions, it is usually unlikely the respondents would take the time to put in their thoughts. As these surveys were mail distributed and self-administered by the respondents, it is a limitation for the researcher to ensure that all respondents answered all open ended questions included in the survey. From 69 respondents, only a few indicate their opinion in the questionnaire survey. However the few which had taken the time to do so, has provided some insightful opinions which are important to this research. Item Q42 gave the respondents an opportunity to provide their opinion on how organizational culture affects partnering success, where a respondent had commented ***"Culture is very important. It highly affects our way of working, within the company and also with others. If our culture is good, the working relationship runs smoothly and will improve the output."***Another respondent mentioned on how organizational culture can help increase the productivity within the firm, which will result in the firm's effectiveness in their projects.

The next item asks the respondents on what can be done to improve the current organizational culture so partnering will succeed (Item Q43). There seem to be a general agreement on the answer for this question. In general the respondents who answered this question indicate the need for organization to educate their employees by providing training or support to develop better understanding of partnering and how it should be done. This can be reflected in an answer given by these respondents; ***"Organize training on partnering, and***

send the staff for courses on partnering so we know what to do in partnering projects." and ***"Knowledge on partnering is crucial. The company must encourage sharing of knowledge among the employees, making use of better information channels."*** In many ways, the comments given by the respondents in the questionnaire survey does not differ much from the responses given by the participants in the interview sessions, as discussed in the previous qualitative analysis chapter.

The previous section has extensively discussed the quantitative findings from the questionnaire employed in this research. The next section will summarize the key findings from the quantitative data analysis and how this assist the researcher in understanding the current situation in Malaysian construction industry with regards to partnering practices.

6.6 SUMMARY

This section has discussed the questionnaire survey conducted for the purpose of data collection for this research. This section also has explained in detail the design of the questionnaire and included the results for reliability testing for the questionnaire employed in this research. A detailed exploration of the results from the questionnaire survey is included, and is organized into the 3 sections as included in the questionnaire itself. These initial quantitative findings is analysed with the aid of SPSS 17 software which has included descriptive frequency statistics, chi-square test, Kruskal-Wallis test and Pearson's correlation test.

Section I of the questionnaire determines the profile of the respondents who took part in the questionnaire survey. In total 69 surveys were completed and returned via freepost, out of 100 surveys distributed. The respondents included are from various organisations in the construction industry and are in different managerial positions; from top management, middle management and the employees. The main criteria for the respondents are they must be over 18 years old, and is currently working in the Malaysian construction industry. Detailed profile distribution along with description is included within the discussion.

Section II of the questionnaire investigates the views of construction professionals on partnering factors extracted from current literature and their organisation's experience with those factors. 8 partnering enabling factors are tested to see if they are already exist in

Malaysian construction industry which are collaboration, trust, procurement, communication, tools, commitment, policies and culture. Results have indicated that 4 of these partnering enabling factors (collaboration, trust, procurement and communication) have already existed in the industry. The remaining 4 partnering enabling factors (tools, commitment, policies, and culture) may not be fully present at the moment; however the respondents understood the need for these factors to be present for partnering to be successful. There were several significant correlations between the partnering factors, as discovered during the correlation test. This finding is important as to provide with an early indication of areas to improve before construction partnering can fully be implemented in Malaysia.

Section III of the questionnaire seeks to understand the awareness of partnering practices among Malaysian construction professionals. The results obtained has significant correlation between them, which reflects that the more similar partnering practices in UK and Malaysia, the higher the chance of possibility of UK based partnering practices in Malaysia. In order to ensure better chance of success in partnering implementation; the partnering practices applied should take into consideration the specific aspect of the Malaysian construction industry.

Section IV of the questionnaire explores the views of construction professionals on types of organizational culture for organisations in construction industry. The 4 types of culturesare cross-measured through 7 dimension of organisational culture as found in the literatures. From the discussion for 7 dimensions of the organisational culture among construction firms in Malaysia, it can be seen that Market and Clan culture are the dominating cultures among these firms. These findings supports the findings of the interview session, where participants commented that their organisational culture is flexible, operated like families and places high importance on teamwork. Pearson correlation analysis was conducted on the organizational culture dimension and the respondent profile, which has revealed interesting results. The results indicate that there are strong correlations between the dimensions of organizational culture and the respondent's age, experience and management level. There seem to be no correlation between the organizational culture dimension and the type of firm, which reflects that the organizational cultures in the construction industry are generally similar for all firms within the industry.

Section V of the questionnaire is geared to know the respondent's view on how influential organizational culture in ensuring partnering success and what can be done to improve their

current organization culture to enable successful partnering. The feedback received indicate that the respondents feel that organizational culture is an integral part of partnering success and feel the need for more opportunity in expanding their knowledge and the organization's support to improve their awareness of partnering which will make them more receptive towards partnering should the industry implements it in the near future.

From the quantitative data analysis, the researcher is able to explore the general views of construction professionals regarding partnering and what is being practiced in the industry. In many cases, the findings obtained in the quantitative data analysis mirrored the findings from the qualitative data analysis, specifically in terms of the presence of partnering enabling factor, and the type of organizational culture in general. This shows that the data obtained in both methods are valid, and recommendations can be made by merging these findings to determine the best way in implementing construction partnering in the Malaysian construction industry.

CHAPTER 7

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

7.1 INTRODUCTION

Up to this point, the chapters in this thesis have paved the path in understanding the construct of developing a strategic approach for partnering by aligning different organizational cultures within the Malaysian construction industry. The final chapter of this thesis, Chapter 7 will revisit the key findings from this study according to the research objectives initially established and draws conclusion from the entire study. The chapter proceeds with proposing a strategic approach for partnering in Malaysian construction industry and provides recommendations on improving the method of implementation for partnering in respect to aligning organizational cultures will be provided, as well as highlighting the contributions to current partnering body of knowledge. This chapter also includes the limitations of this research, and reflections by the researcher for future work extending from the ideas gathered in this research. Chapter 7 ends this thesis with conclusions for this research. The following section will summarize the key findings from the literature review as well as the investigations made by the researcher as they are presented in this thesis.

7.2 DISCUSSION OF FINDINGS

Based on the objectives established in Chapter 1, the researcher has methodically set out to highlight the basic concepts essential in developing a strategic approach for partnering. This thesis began by reviewing the literature that describes the general conditions of current global construction industry and the construction team, and later explains how partnering was introduced in solving some the issues faced by the industry. This section will revisit and summarize the key findings from literature review and data collection conducted in this research, in the order of the research objectives.

7.2.1 EXISTING PRACTICES OF PARTNERING, ITS OVERALL CONCEPTS AND EXISTING FRAMEWORKS IN THE CONSTRUCTION INDUSTRY.

The partnering strategy in the global construction industry develops mainly from the need to resolve the issue of adverse relationships as well as integrating the design and construction stages within construction projects from earlier on. Through early collaboration of construction teams, issues commonly present in the traditional procurement system such as competitive bidding, divided self-interests, and disputes caused by unplanned variation of work can be avoided.

Generally, partnering can be defined in two ways. It can be referred according to its attributes of trust, shared vision, and long term commitment, or as a process where partnering is seen as a verb; developing a mission statement, agreeing on goals and conducting partnering workshop. In this research partnering is defined as a series of strategic actions that reflects the common objectives of the parties involved in a project together. Partnering is believed to develop in several stages; the most ideal stage would the third generation partnering in which the partners will be able to rely on each other in opportunities for subsequent projects, resulting in business sustainability and ensuring the survival of the businesses in the long run.

Prior to investigating the implementation of partnering in Malaysian construction industry, it is crucial to identify what are the enabling factors for partnering. An extensive review of literature on partnering in the construction industry has brought to light the eight enabling factors for partnering commonly cited by previous studies, which is shown in the following Figure 7.1.

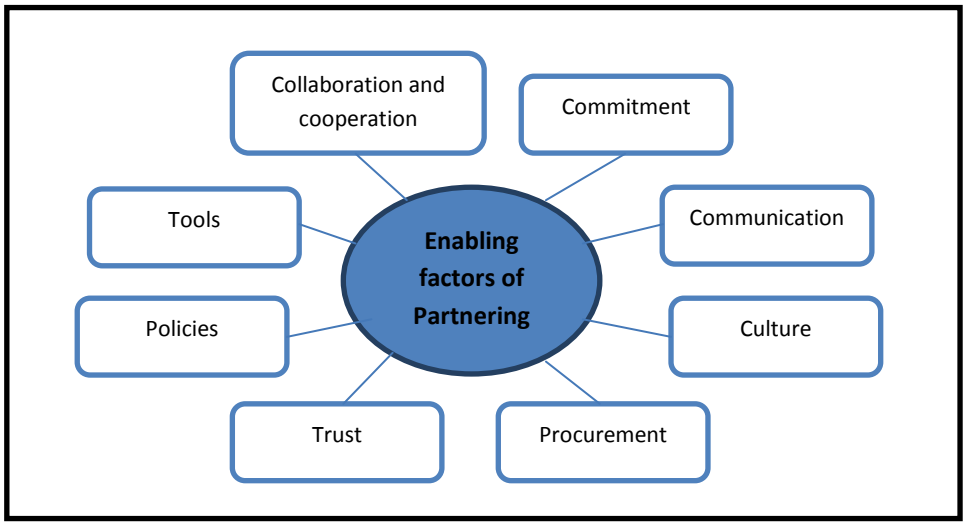


Figure 7.1: Enabling factors of partnering (Source: Developed in the present research)

These factors were explored, described and cited in detail in Section 2.8 of Chapter 2. According to the literature review, some of these enabling factors are mutually inclusive and affected by the presence of another, while some are exclusive and independent. Previous studies have shown how the existence of these factors assisted partnering success, indicating that the identification and proper understanding of these factors is paramount to all parties venturing into the partnering relationship. The description of these enabling factors, as found in partnering related literatures is as shown in the following Table 7.1.

Table 7.1: Description of enabling factors for partnering

Enabling factors	Description
Collaboration & cooperation	Collaborative spirit essential in partnering teams. Cooperation among parties in construction projects is also more important than competition to facilitate partnering success. This factor assists in disputes resolution, if not entirely eliminating disputes.
Commitment	The 'glue' that keeps the drive and reason for partnering throughout the entire course of the construction project. The desire for continuity displayed by the willingness to invest resources into a relationship.
Communication	The sharing of meaning to reach a mutual understanding and to gain a response, which involves interactions between the sender and receiver of messages. Open and timely communication is important in partnering to ensure faster and optimum decision making.
Culture	Cultural capability is essential as it encourages the partners to not only find compromise on cultural differences, but to find synergy through combining the best characteristics and attributes on any cultural dimension.
Trust	Trust determines the extent that partners are willing to share their knowledge and resources. Trust also assist in creating a positive atmosphere required to engage in a partnering relationship.
Tools	Partnering tools provide the necessary reinforcement throughout the partnering relationship. Provide checks to avoid abuse and misuse of the partnering relationship. Common tools include workshops, meetings, partnering charter and partner feedback monitoring system.
Policies	Policies will ensure certain idealism is passed on, which in turn will create awareness among construction industry players and provide enough interest for them to initiate the partnering approach in their subsequent projects.
Procurement	Partnering procurement methods aims to eliminate adversarial relationships between parties involved by encouraging them to work together towards achieving shared objectives and a win-win outcome.

(Source: Developed in the present research)

Through effective implementation of partnering, with the aid of these enabling factors as shown in Table 7.1 above, the possibility of gaining the benefits from successful partnering is higher. The outcome of successful partnering can be realized by adhering and diligence in implementing the partnering concept, as well as ensuring all enabling factors are developed and present within the partnering alliance. The literature review conducted has revealed the many positive outcomes from successful partnering as identified by previous studies, which can be categorized into several themes; people, process, product and price. The identification of these outcomes is essential to this research, in order to decipher the entire concept of

partnering in the construction industry which has been built through findings from previous researchers. These outcomes as cited in section 2.10 of Chapter 2 are summarized in the following Figure 7.2.

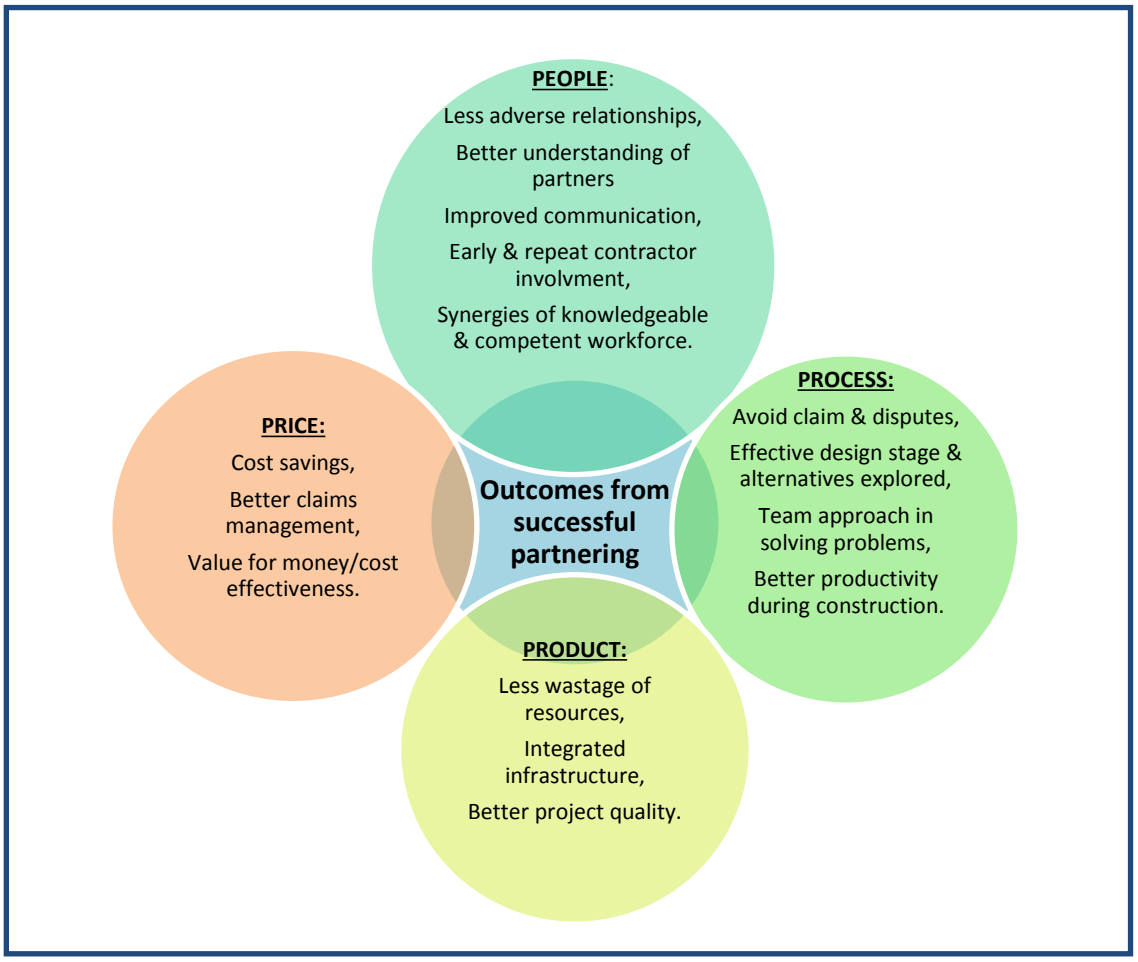


Figure 7.2: Outcomes from successful partnering as found in previous literatures. (Source: Developed in the present research)

Although partnering has proven to have its positive impacts through the outcomes from successful partnering, this beneficial practice is not always received without resistance. The literature review has identified several barriers to partnering, as cited in Section 2.11 of Chapter 2. These barriers include;

- Lack of trust within firms in the construction industry
- Lack of common goals among firms involved in the partnering alliance.
- Underbidding of contracts (which may cause some partners to feel that their needs are sacrificed especially at the end of construction projects).

- Personal issues of teams involved (ego or personality indifference, lack of working commitment and failure to perform)

With the identification of barriers from previous research on partnering, the stakeholders and practitioners could take preventive measures to avoid the risk of failure caused by these barriers when implementing partnering. Apart from taking preventive measures, the stakeholders and practitioners could also base their efforts for partnering through the use of strategic efforts for partnering. As cited in Section 2.12 of Chapter 2, numerous strategic approaches in the form of frameworks, models and guidelines have been formulated by previous studies to aid the implementation of partnering. These strategic approaches can be classified according to their focus namely; relational, component & factors, procurement, trust, stages, communication, and finally innovation, performance & outcome. Table 2.6 in Chapter 2 has displayed the distribution of these strategic approaches according to various aspects of partnering. From this classification, the researcher has been able to identify significant lack of strategic approaches focusing on culture, even though there is evidence of culture as a significant enabler for partnering in literatures prior to this thesis. Therefore, this thesis highlights the role of organizational culture in assisting partnering, in fulfilling the gap in current partnering knowledge. The identification of the gap in current partnering knowledge is achieved after a systematic scrutiny of the literatures and has further directed the literature review to further identify the cultural barriers and relationship between partnering and organizational culture.

From the discussions above, it should be determined that the researcher has achieved the first objective of this research, which is to develop an understanding of partnering in general; its overall concept and existing frameworks in the construction industry. The next section entails the findings from the research during the process of achieving the second objective of this research.

7.2.2 THE CONCEPT OF ORGANIZATIONAL CULTURE AND ITS RELATIONSHIP WITH PARTNERING IN THE CONSTRUCTION INDUSTRY

Although previous studies have noted the impact culture has on partnering success, thereseem to be lack of effort made on formulating strategic partnering approaches which highlights the role of culture as the main enabler for partnering. Realizing this gap, the researcher feels the development of a framework for partnering through aligning of organizational culture would be a feasible area to research, and provide a significant contribution to partnering knowledge. This section describes the findings from literature review conducted to explore the concepts of organizational culture, methods of organizational assessment as well as its relationship to partnering in the construction industry.

Earlier on, section 2.8 in Chapter 2 has discussed the importance of culture as an enabling factor for partnering. The literature review has revealed that it is important for the parties involved in a partnering relationship to have the appropriate culture for partnering. The presence of appropriate and similar culture fosters trust building and will consequently mediate the core processes of partnering. Because culture governs the way partners operate, aligning different cultures at organizational level is important as it is the closest contact of separate formal entities (firms) within the partnering relationship. In the context of Malaysia which construction industry is made of multi-ethnic workforce with various cultural antecedents, identifying culture at organizational level will be more beneficial as it is the common ground for the practitioners working in the construction industry. Therefore, this thesis has focused on exploring the concept of organizational culture and how it will assist partnering in Malaysian construction industry; which will then aid to fulfil the aim of this research in the development of a strategic approach for partnering in Malaysia.

In this thesis, organizational culture is defined as a complex set of values, beliefs, assumptions and symbols that define the way in which a firm conducts its business. It can be seen in the way the organization runs its business, deals with employees and customers, and responds to the needs of the society. The impact of organizational culture is evident in certain managerial aspects of the firm; especially in the autonomy for decision making, development of new ideas and personal expressions, and the commitment of the members of the firm in achieving collective objectives of the entire organization.

Organizational culture can be observed through its basic elements as shown and cited in Figure 3.1 of Chapter 3; the paradigm, control systems, organizational structures, power structures, symbols, rituals & routines, and finally stories & myths. The type of culture which is present in an organization depends on the level these elements are affected.

Accordingly, the identification of organizational culture is important to determine the best way in dealing with the organization, even more so when the firm is involved in a partnering project. The literature review conducted has explored the frameworks and models which vary from one another as discussed and cited in Chapter 3 of this thesis, and the comparison for these frameworks is shown in Table 3.5 also in Chapter 3 of this thesis. Each of these frameworks and models have varying focus in their approaches, which contributes to the researcher's understanding in organizational culture and how it is captured within an organization. The key points gained through summarizing these frameworks and models include;

- There are a number of cultures which exist within an organization.
- The intensity of culture varies according to the levels of culture acknowledged by its members, and as observed by its business partners.
- The business environment in which the organization operates in significantly affects its organizational culture.
- Organizational culture is closely linked with the type of organizational structure.
- The values among the organizational members and their behaviours shape the type of organizational culture.
- The degree of an organization's flexibility and focus in their business environment contributes to the type of culture present within that particular organization.

These key points were used during the interview sessions as part of the explanation to the participants, in regards to the fundamental concept of organizational culture. The participants were then able to understand the questions regarding organizational culture and later provided the researcher with their insights during the interview sessions, as discussed in Chapter 5.

Due to its simplicity, versatility and previous application within studies conducted in Malaysia, the Competing Values Framework (CVF) developed by Cameron and Quinn (1999) have been chosen as the method for assessing organizational culture in this research. The justification for the selection of this model as main method for organizational culture

assessment is provided in Chapter 3 of this thesis. This model is further supplemented with the dimensions of organizational culture in construction industry inspired by Cheung et al (2011) to ensure that the organizational culture among firms in Malaysian construction industry can be appropriately assessed. The CVF and the dimensions for organizational culture were both incorporated in the quantitative research instrument for the purpose of identification of organizational culture in this research, as discussed accordingly in Chapter 6 of this thesis.

The above discussion has shown that the researcher have achieved the second objective of this research, which is to investigate the concept of organizational culture and its relationship with partnering in the construction industry. The basic construct of organizational culture has been explored, and the key points gained from models and frameworks generated from theories of organizational culture have been taken on board for discussion with participants during the qualitative data collection stage. The next section will discuss the findings pertaining to the third objective for this research.

7.2.3 PRIVATE SME CONSULTANT FIRMS: INVOLVEMENT IN PARTNERING, PARTNERING BARRIERS AND ENABLERS EXPERIENCED

Based on the justification made in Chapters 1, 5 and earlier in the introduction section of this chapter, this research seeks the insights of the private SME consultants firms in Malaysia on how partnering can be implemented more effectively in Malaysian construction industry. Therefore the third objective of this research will investigate the private SME consultant firms' involvement in partnering, as well as the enablers and barriers that they have experienced. At the data collection stage, this objective was investigated through 2 themes; ***understanding the partnering concept*** and ***awareness of partnering practices***.

The partnering strategy can be delivered through a number of procurement methods; the public-private partnerships (PPP), private finance initiative (PFI), and private sector involvement (PSI). In this thesis, the PPP method is highlighted, due to the understanding within the Malaysian construction industry that PFI is also inclusive in PPP and this enabled the participants at data collection stage to participate with the appropriate understanding. The qualitative data collection conducted among private SME consultants firm in Malaysia

indicate that partnering has already been conducted informally within the industry, particularly business relationships exampling the relational and collaborative aspects of partnering. However, the 'formal' definitions of PPP and partnering are not fully identified by the participants, as most of them relates their involvement in previous Design and Build (D&B) projects as their closest experience to partnering. It should be mentioned that although the D&B procurement method can be applied to partnering projects, the D&B projects in Malaysia at present includes initial selection of contractors and other consultants by the client prior to the award of contract. Therefore, at the point of research, it can be said the involvement of private SME consultant firms in partnering projects are still very limited. This could be due to the fact that partnering has only been introduced formally into the industry less than 5 years at the time of data collection, hence the limited partnering knowledge among participants during the interview sessions. The findings also indicate that although partnering is considered in its infancy in the Malaysian construction industry, the participants are in agreement of the positive impacts from partnering, similar to those found in literature. These positive impacts are;

- Sharing of expertise, knowledge and technology
- Enhancing quality in construction
- Minimizing error in the construction process

In general the participants interviewed all believed that partnering is a positive move to improve and solve the current problems of the construction industry. With their previous understanding and experience of D&B, the participants expect the contractor to take the lead in partnering construction projects. The participants have generally agreed that partnering will contribute to cost optimization and task efficiency in project delivery. However to ensure that partnering can be implemented successfully, there are several challenges to be resolved within the industry. The qualitative data analysis had identified several challenges in regards to the implementation of partnering, perceived as barriers by the participants, which are;

- Bureaucratic challenges and issues with inefficient processes when dealing with authorities and effectiveness of monitoring system
- Risk of non-successful bidding
- Issues of earn-values, payment and professional fees among partnering firms
- Misunderstanding of roles among firms involved in the partnering relationship

Early identification of these barriers is crucial for the authorities to take necessary precautions so further problems in partnering projects can be avoided.

In regards to the awareness of partnering practices in other countries, most of the participants were not familiar with this practice in other places than Malaysia. Findings indicate that lack of awareness could be due to; lack of effective channel for relaying information on partnering in other parts of the world, and the attitude of the practitioners themselves, who have no interest in seeking new knowledge unless required by the project. Therefore it is imperative for the authorities to review and improve current information channels within the industry to ensure that the industry players are up to date with current developments, particularly in the global construction industry and minimize the hesitation to get involved in partnering projects. There is also an indication for the need of more partnering support and knowledge from the authorities and government sectorto educate the practitioners within the industry, as some of the participants interviewed expressed their reluctance to accept partnering due to 'lukewarm' monitoring efforts from the authorities as they feel lack of governmental role reflects to partnering being an ambiguous undertaking. This reflected the pivotal role of the Malaysian government in encouraging adoption of partnering among the industry practitioners.

The findings also reflect that attitudinal issues relating to lack of interest in current knowledge, which can be remedied through fostering the appropriate culture of knowledge sharing and innovativeness. The participants in the interview sessions also highlighted the need for incorporating the cultural aspects which are specific to the Malaysian construction industry in efforts, guidelines and execution of partnering practices.

The quantitative data collection was also conducted to achieve the third objective, but is targeted at the general opinions of practitioners in the construction industry. The quantitative data obtained is for the purpose to complement part of the qualitative data. In order to determine the level of engagement in partnering within the Malaysian construction industry, the enabling factors found from literature review (as discussed in Chapter 2) has been brought forward to be explored through the questionnaire survey, in order to determine which enabling factors are present in Malaysian construction and which enabling factors are yet to be developed. The comparison of findings for absent enabling factors for partnering from both data collection methods is summarized in Table 7.2 below.

Table 7.2: Enabling factors for partnering which are still absent in the Malaysian construction industry.

Qualitative findings (Interview)	Quantitative findings (Questionnaire)
Culture Policies Commitment Trust	Culture Policies Commitment Tools

(Source: Findings from data collection in this research)

It can be seen that there is a consensus among both data in regards to the missing enabling factor of partnering within the Malaysian construction industry. Pearson's correlation tests conducted on the quantitative data as shown in Chapter 6; indicate that improvements in these factors will lead to improvements in other related factors as well. It was determined that improvements in ***Policies*** regarding partnering will increase the use of partnering ***Tools***, encourage ***Trust*** building among organizations, and application of appropriate ***Procurement*** methods. Likewise, increased level of ***Trust*** will promote the development of ***Policies*** for partnering and enhance the ***Communication*** level within the partnering venture. There are also strong correlations between culture, tools and commitment; indicating the presence of appropriate ***Culture*** will increase the applications of partnering ***Tools*** as well as enhance the ***Commitment*** level among the construction team members. These findings are important as they are context-specific, and will be included in the recommendations for implementing effective partnering in Malaysia. The following Figure 7.3 below has mapped out the findings from this research in the process of achieving the second objective.

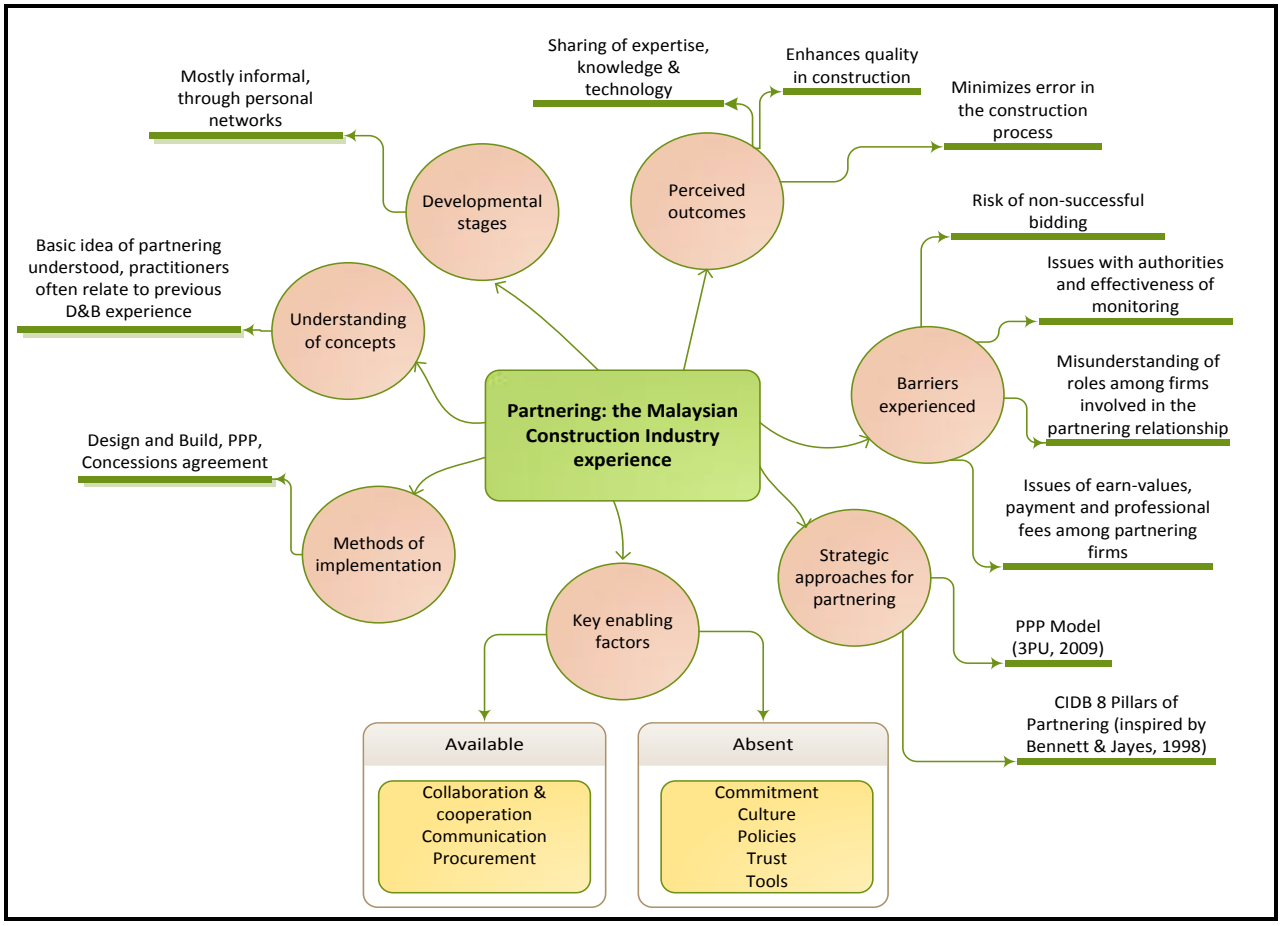


Figure 7.3: Partnering: The Malaysian Construction Industry experience
(Source: Developed in this research)

The discussion above have highlighted the research process conducted in achieving the third objective of this research, which is to determine the level of engagement in partnering practices among private SME consultant firms in Malaysian construction industry. Although partnering is still considered a fairly recent practice within the industry, the practitioners are in agreement of its shared benefits and opportunities. The barriers to partnering in Malaysia were also identified in achieving the third objective. The data collection conducted has brought to light which missing enabling factor for partnering, and this will provide a benchmark to the authorities to develop in enabling effective partnering.

Based on the exploration of the research findings, it can be concluded that the researcher has demonstrated achieving the third objective of this research. The next section will explore the findings gained in achieving the fourth objective of this research.

7.2.4 THE MALAYSIAN CULTURAL BARRIERS AND TYPE OF ORGANIZATIONAL CULTURE FOR FIRMS IN THE MALAYSIAN CONSTRUCTION INDUSTRY

The fourth objective of this research sets out to explore the cultural barriers in the Malaysian context and the types of organizational culture present in firms in the Malaysian construction industry. The identification of organizational culture of these firms is important to determine the connection in regards to the firm's type of culture at present and their level of engagement in partnering practices.

In exploring the cultural barriers of Malaysia, the literature review has revealed the values in which the culture of Malaysia is based upon as discussed in Section 3.10, Chapter 3 of this thesis. The typical Malaysian shares with the rest of the nation some observable values including; shyness, limited expression of feelings, respect of others, religious orientation and a collectivistic lifestyle. Although the country is made of multi-ethnic population, Malaysians regardless of ethnic group generally like to work with people who are easy to relate and understand their culture, traditions and sensitivities. According to the findings from qualitative data collection, these cultural features are also present within the private SME consultant firms, whereby the work environment within these firms are pleasant and flexible. The main concern is that the employees are able to complete their task within the due date, for which they are given flexibility in working hours. In general, private SME consultant firms in Malaysia practice an orientation towards flexibility, discretion and dynamism in reference to their daily business activities; however the focus of these firms varies. However, the focus of these firms varies equally between; the outward orientation (external focus and opportunities, differentiation and rivalry with regards to outsiders), and the inward orientation (internal focus and capability, integration and unity of processes). This could be attributed to the location of the firm in which these practitioners are working; where firms located closer to the capital would exhibit an outward focus in their culture due to the saturation of businesses nearby and high competition located near the capital, whereas the firms located away from the capital will show an inward focus in their organizational culture.

The literature review indicates that the Malaysian construction industry is mainly comprised of SMEs. The smaller size of the organization enables all-inclusive understanding of the organizational culture among its members. This is also shown in the qualitative findings of

this research, where all participants interviewed had reflected that the members of their organizations totally understand and abide by their organizational culture. The only problem that seems to be repeatedly mentioned by one participant after another during the interview sessions is the lack of ethics and uphold to their organizational culture by the administrative staff in their organizations. This could be due to their difference in work ethics, as the administrative staffs working in firms within the Malaysian construction industry possess significantly lower academic qualifications compared to their technical and professional colleagues.

Through the exploration of organizational concepts and its strategic approaches in chapter 3, the literature review has revealed that organizational culture is also influenced by the structure within a particular organization. Findings from data collection indicate that the existing structure in the private SME consultant firms has never affected these firms in working collaboratively with other organizations in a project. Therefore it can be argued that, the organizational culture in the private SME consultant firms are already open to partnering and will require 'fine-tuning' so these firms can participate effectively in partnering projects.

The participants interviewed have also agreed that similarities in organizational culture enable effective partnering relationships. According to the findings described in Chapter 5, similarities in organizational cultures imply:

- Similar work ethics and corporate values
- Mutual understanding in prioritizing of tasks
- Common respect of partners
- Ease of trust and relationship building

Both qualitative and quantitative findings also reflected the importance of organizational culture in significantly improving the output from collaboration of partnering firms. The respondents believed that organizational culture will help in increasing productivity within firms, which in turn will result in the firm's effectiveness in their projects. However it should also be mentioned that some participants believed that partnering success does not rely on culture similarities, but rather the professionalism and mutual understanding of partnering goals among firms involved. In parallel to this belief, is the importance of having the right people with the right attitude within an organization to fully develop an effective partnering relationship. This proposition agrees with findings from the literature review in identifying

the absence of the ‘right’ personnel for partnering project as one of the barriers to partnering in the construction industry.

A critical part of the fourth objective is to identify the type of organizational culture among firms in Malaysian construction industry. This is achieved through Section IV of the questionnaire survey employed, where the respondents are asked to cross-measure the 4 types of culture identified by Cameron and Quinn (1999); ***Clan, Hierarchy, Adhocracy*** and ***Market***; through the 7 dimensions of organizational culture in construction industry which was inspired by Cheung et al (2011); ***Client orientation, Workforce orientation, Leadership/Management, Performance orientation, Reward orientation, Innovation*** and ***Teamwork***. As previously discussed in Chapter 6 of this thesis, the results indicate that the Market and Clan cultures are the dominating cultures in the Malaysian construction industry.

The findings from the questionnaires supports the findings in the interview sessions, where the participants reflected that their organizational culture maintains flexibility and discretion, operated like families which exemplifies the Clan Culture. However in certain aspects of the operations of the firms in the Malaysian construction industry, the Market Culture prevails, especially in team integration and workforce orientation where the participants feel that they have certain procedure and standards to adhere to in tasks which are related to external customers. Findings from both qualitative and quantitative methods were then merged, and mapped on the CVF model. It should be mentioned that the mapping of organizational culture dimensions in this thesis are preliminary in nature, however these findings are indicative of the culture in the Malaysian construction industry at present and can be validated in future research. The findings for the position of the 7 industry-specific dimensions within the 4 culture types according to the CVF can be seen in the following Figure 7.4.

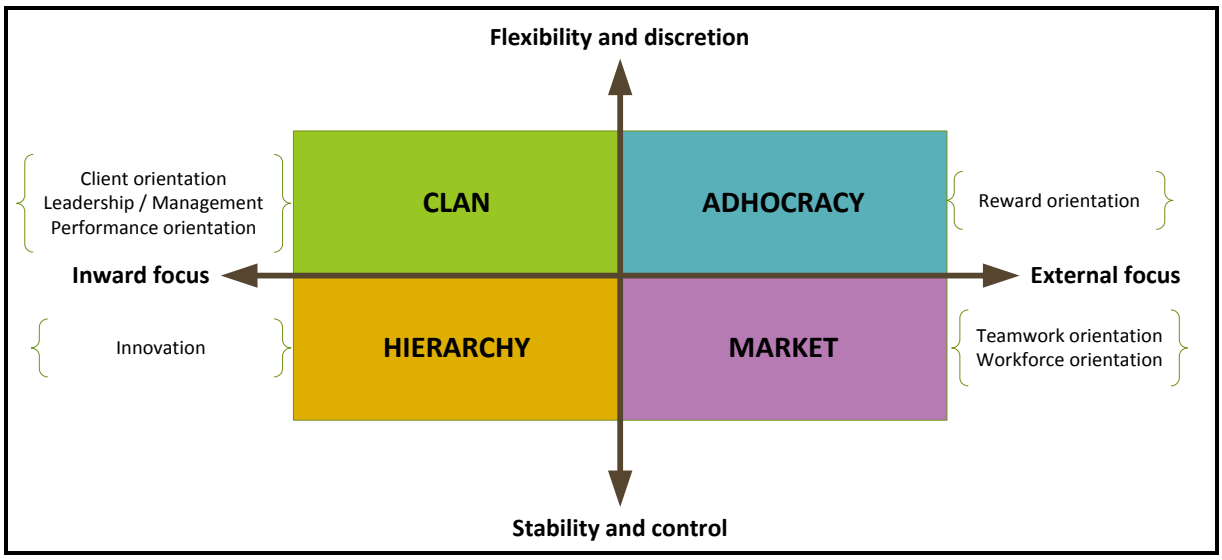


Figure 7.4: The position of 7 organizational culture dimensions for Malaysian construction firms (Source: Findings from data collection in this research)

In evaluating the suitability of existing cultures in enabling partnering, it can be seen that parts of the organizational culture at present are already within the appropriate region of the CVF model. The client orientation, performance orientation and leadership/management dimensions are all located in the Clan culture, which enables these organizations the flexibility in their internal processes and activities. Keeping in mind that partnering requires flexibility in some of its enabling factors such as communication, procurement, cultural adaptation and the also desire for developing commitments and trust with external parties, it is crucial the dimensions of organizational culture are located within the appropriate region within the CVF; ones that allow for flexibility and variation in focus. Ideally, the teamwork and workforce orientation dimensions should be located within the Adhocracy culture region to encourage the engagement in partnering practices, as the Adhocracy culture provides more freedom for the practitioners involved to manage their activities in achieving mutual objectives with partner firms. This particular finding can assist the industry practitioners in re-shaping current organizational cultures into the ideal culture most appropriate for partnering.

A closer look at the position of the dimensions reveals that in terms of innovation, the construction firms in Malaysia are still bounded by the traditionally standard procedures attributed to the Hierarchy culture. Bureaucracy stifles innovation and creativity (Lam, 2004), which could be the reason why the Malaysian construction industry is suffering from the problem of the lack in innovations. Partnering practices and a change of culture will assist to

improve innovations in the industry, but it requires a higher degree of flexibility and the influence of external factors of demand and market trends. Therefore, the current culture for innovation dimension should be reviewed; and adjustments must be made so that the culture for innovation is more Adhocracy in nature. Consequently, innovative activities within the industry can then be encouraged by imposing less rigid procedures to allow for creativity and knowledge sharing among firms.

The above discussion has shown that the researcher have achieved the fourth objective of this research, which is to explore the cultural barriers in Malaysian context and the types of organizational culture among Malaysian construction firms in general, and the organizational culture in private SME consultant firms in particular. The barriers in Malaysia have been justified through its cultural antecedents, and the type of organizational culture which currently exists in the Malaysian construction industry has been discussed.

The findings obtained in the process of achieving each one of the research objectives will be used in the development of a framework for partnering through aligning organizational cultures in the Malaysia construction industry, which is also the fifth objective of this research. This development of this framework will be highlighted in the following section.

7.3 PROPOSED FRAMEWORK FOR PARTNERING IN MALAYSIAN CONSTRUCTION INDUSTRY

The development of framework in this thesis is based on the concepts and theories explored from the literature review as well the findings gathered from both qualitative and quantitative methods. This framework places organizational culture in centre stage towards establishing effective partnering in Malaysia, to reduce the gap within current partnering knowledge in linking partnering and organizational culture. The findings from literature review in Chapter 2 of this thesis have shown that partnering could be assisted by the presence of certain enablers within the organization. By taking into consideration of these enablers, and identifying the type of organizational culture according to the industry-specific dimensions, the appropriate culture for partnering could be developed by ensuring that the cultural dimensions for partnering firms are comprised of culture types which are more flexible in nature (Adhocracy and Clan cultures).

Accordingly, this framework is developed within the Malaysian context.The framework developed in this research is as shown in the following Figure 7.5.

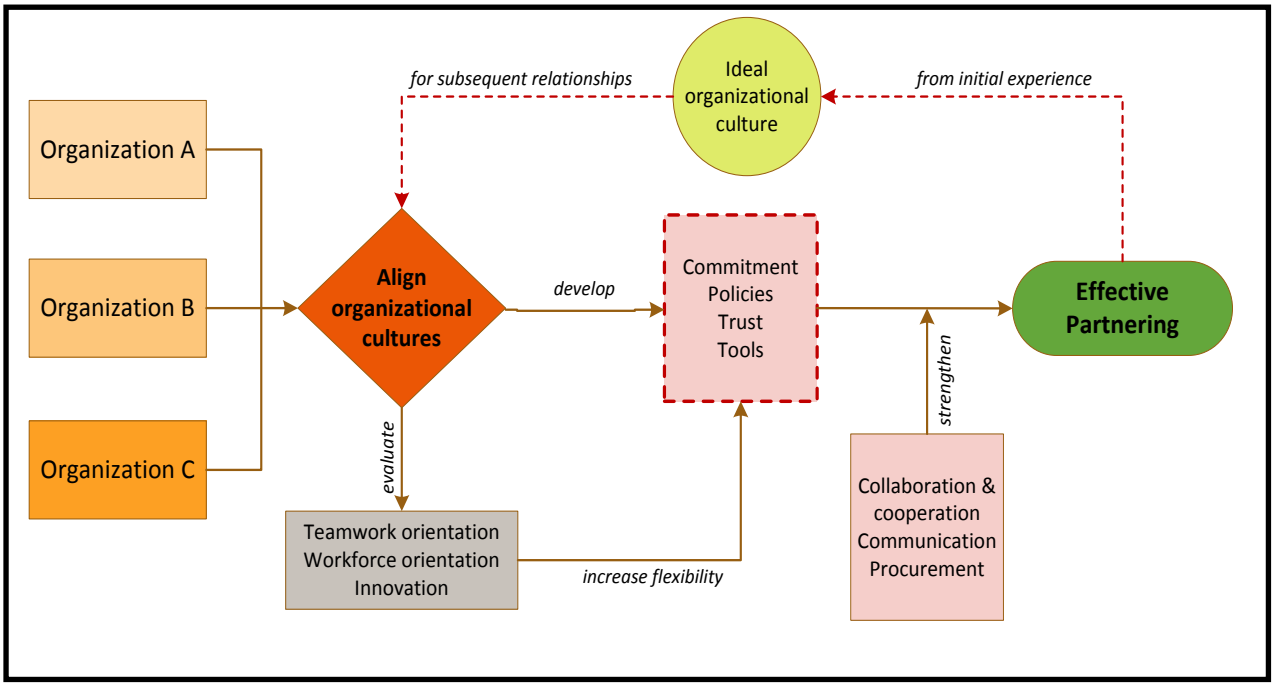


Figure 7.5: Framework for effective partnering through aligning organizational cultures in Malaysian construction industry (Developed by the present research)

The framework in Figure 7.5 above views organizations entering a partnering relationship bounded by their own culture and unique practices to form a partnering alliance. The central element of this framework is a decision point with regards to aligning the culture of these organizations. There could be two possible outcomes from this decision point in this framework. The first is that the cultures of these organizations are dissimilar hence requiring further evaluation of their culture in their organizations specifically in areas of teamwork orientation, workforce orientation and innovation which will require higher degree of flexibility prior to progressing to the next point of the partnering relationship. The second possible outcome is that the organizations already have similar culture which have prepared them to collectively develop the key enablers to partnering; commitment, policies, tools and trust. The development of these key enablers requires the partnering alliance to be open with each other, as well as establishing several regulations within the alliance. As previously noted in Section 7.2.3, some of these enablers are mutually inclusive, and the presence of one will affect another. It was determined that improvements in ***Policies*** regarding partnering will increase the use of partnering ***Tools***, encourage ***Trust*** building among organizations, and

application of appropriate ***Procurement*** methods. There are also strong correlations between culture, tools and commitment; indicating the presence of appropriate ***Culture*** will increase the applications of partnering ***Tools*** as well as enhance the ***Commitment*** level among the construction team members.

Once the first set of key enablers is present, the partnering alliance shall next aim to strengthen the key enablers which are already present in the Malaysian context; collaboration and cooperation, communication, and procurement. This could be done by enforcing measures in maintaining the partnering spirit, open and timely communication and keeping abreast with current methods of relational contracting. With all the enablers in place, and the organizational culture governing the behaviour and action of the alliance, effective partnering can then be achieved.

In line with the aim for partnering in achieving business sustainability, once effective partnering is achieved, the ideal organizational culture which contributes to this will be taken on board and implemented in subsequent partnering projects, which is signified by the red dashed arrow loop in the framework. The loop feature in this framework is important to show that organizational culture is dynamic in nature as it deals with the ever changing human behaviour and actions, which previous experience will shape future expectations. It is believed that with continuous improvements in organizational culture, and the presence of the key enablers in the organizations effective partnering can be achieved.

This framework is beneficial to the current Malaysian construction industry, which is lacking in strategic approaches developed from empirical findings. Although this framework is developed based on the Malaysian context, it can be applied to other developing countries which circumstances and cultural settings are similar to Malaysia.

7.4 LIMITATIONS OF THIS STUDY

This research has achieved its aim and objectives that was established in Chapter 1. However, throughout the entire course of this research, there were several obstacles encountered. These obstacles are as follows:

- ***In-depth data only from the consultants -*** This research only takes on board the in-depth investigation of private SME consultant firms in the Malaysian construction industry, and general survey of other segments in the construction industry. Future work should include data from other segments as well, so a pattern in partnering adoption within the construction industry can be profiled.

- ***Research is focused within the Malaysian context*** – The research has only included findings from the Malaysian construction context. It would be expected if the research context is expanded to include other countries, more factors than what has been mentioned in this thesis contributing to the successful implementation of partnering will emerge.

- ***Validity of the proposed framework*** – The framework needs to be validated in future research. The main reason for not being able to test the framework is that cultural change takes time, and due to time constraints in completing this research the testing of the framework is not a feasible option and is beyond the scope of time allocated for this research. Therefore it is recommended for future research to test and validate the framework developed in this research.

- ***Cultural barriers, personal values and self-doubt of participants*** – As noted in Chapter 3, the typical Malaysian possess some observable values of shyness, limited expression of feelings, respect for others, religious orientation and a collectivistic lifestyle (Mahmud et al, 2010 and Schermerhorn, 2004). During the interview sessions, the researcher had to coax some of the participants to provide their insights in regards to partnering and organizational concepts. Some of the participants feel uneasy to provide their feedback on questions relating to organizational culture and structure, despite being assured of their anonymity in this research.

- ***Sampling size and challenges –*** Due to the background of the Malaysian construction industry which is male dominated and their offhand attitude towards knowledge sharing as identified in this research, it was challenging for a female researcher to achieve a bigger quantitative sample size for this research. Within the limited time frame for this research, 69 samples were obtained through the researcher's personal

networks and university alumni. However, the researcher has taken measures to ensure that the quantitative sample is represented by the various segments of the Malaysian construction industry to provide findings which are indicative of the current situation in Malaysia.

7.5 CONTRIBUTIONS TO THE BODY OF KNOWLEDGE

This research focused on highlighting the relationship between effective partnering and appropriate organizational culture, which has been scarcely mentioned in current literatures. This research also contributes to the body of knowledge in its novelty of approach, where the mixed methodology survey design was employed to answer the research questions established in Chapter 1 of this thesis.

This research has contributed to the body in knowledge throughout the entire research process. In conducting an extensive literature review, the key enabling factors from previous studies has been identified and compiled as elaborated Section 2.8 in Chapter 2 of this thesis. Within the same chapter in Table 2.8, this research have also compiled the strategic approaches in the form of frameworks, guidelines and models for partnering in construction and have classified these approaches according to the main aspect of partnering they each highlighted. The classification of strategic approach has led to the identification of the gap within partnering knowledge, which this research aims to fill by proposing a strategic approach for effective partnering through aligning different organizational cultures in the construction industry.

In understanding the concept of organizational culture and the theories pertaining to this concept, this research has determined that the Competing Values Framework (CVF) is the appropriate method to be used in assessing the organizational culture among firms in the Malaysian construction industry as highlighted in Chapter 3. The novelty of this process lies in the use of organizational culture dimensions in the construction industry which was inspired by the work of Cheung et al (2011), to ensure that the construct of organizational culture in the Malaysian construction industry can be fully captured and identified.

The key ideas gathered through the exploration of key concepts and theories in the literature review have complemented the methodological decisions made in answering the research

questions. Chapter 4 of this thesis have explored the methodological approach in conducting this research, as well as justifying the appropriate design for this research. This research also adds to the body of knowledge through the research design selected, which is the mixed methodology survey design, within the context of Malaysian construction industry.

The qualitative findings discussed in Chapter 5 of this thesis provide the insights gained from the private SME consultant firms in Malaysia with regards to their experience and perceptions in partnering, as a project delivery method. The in-depth findings from the qualitative data collection has demonstrated the barriers, issues and reasons behind the level of engagement in partnering from the perspectives of the consultants, a segment not often focused in previous studies within the construction industry. As the consultants play an important role in innovation and innovation is an outcome of partnering; it is critical to determine the barriers and challenges faced by the consultants in adopting partnering practices. In doing so, these barriers can be eliminated to enable partnering and consequently aiding innovation within the industry. The qualitative findings have also been summarized in Figure 7.3 of this chapter.

Another significant contribution of this research is the identification of missing key enablers for partnering in the Malaysian construction industry, as highlighted in Chapter 6 of this thesis. It has been determined that the Malaysian construction industry has yet to fully develop 5 out of the 8 key enabling factors for partnering. These missing key enabling factors are; Commitment, Culture, Policies, Tools and Trust, as previously shown in Table 7.2 in this chapter. The missing key factors should be developed in line with strengthening the existing key factors to ensure the success of the partnering relationship. Besides that, another important finding from the quantitative data collection is the type of organizational culture among firms in Malaysian construction industry which was identified according to the industry-specific dimension of organizational culture. This way, the culture identification is more specific, enabling improvements to be done in targeted dimension of the organizational culture.

The final contribution of this research is the realization of the research aim in developing a framework for effective partnering through aligning organizational cultures in Malaysian construction industry, as shown in Figure 7.5. Although this framework is developed under Malaysian context, it can also be applied in other developing countries sharing similar

cultural and regional background (such as Indonesia, Thailand or Brunei). Therefore, it can be said that the development of this framework also has reduced the current gap in partnering knowledge, which is lacking in strategic approach that highlights the role of culture.

Accordingly, the outcomes from this research can be adopted for future educational or training use beneficial for practitioners as hands-on professional development or for theoretical understanding in academic programmes. This dissemination of conceptual knowledge in partnering and organizational culture in the construction industry will provide in-depth understanding among academia, policy makers, practitioners and students, which in turn will encourage the engagement in partnering activities among firms in the Malaysian construction industry.

7.6 RECOMMENDATIONS

This section proposes related areas of research where additional inquiries could further enhance the value of this research. The many issues and problems encountered throughout the course of this research have inspired several recommendations for future work to extend the boundaries of partnering knowledge. These recommendations are as follows;

- In-depth studies for each of the segments (contractor, architects, specialist contractors, clients, manufacturers, etc.) in the Malaysian construction industry to determine their experience and readiness for partnering.
- Further research needed in mapping of organizational culture for each of the segment based on the industry-specific dimensions, so segment-specific strategies in aligning organizational cultures can be formulated.
- Extensive studies in the exploration of the missing key enabling factors for partnering, to establish a robust policy for partnering, methods for commitment and trust building for partnering in the Malaysian construction industry.
- Considering the role of authorities and government has been highlighted by the participants in monitoring partnering efforts as well as enforcing partnering related policies, further work should focus on evaluating current partnering related policies in the Malaysian construction industry to investigate the effectiveness of these policies.

- Future work should include a longitudinal qualitative study to test the framework developed in this research, which will track the development of partnering projects from the beginning to end and seek to determine if innovation is the by-product of successful partnering ventures.

7.7 CONCLUSIONS

The exploration and understanding of theoretical concepts as well as the methodology applied in gaining the insights of the practitioners have all implied that partnering and organizational culture are indeed closely linked. This research has successfully determined that the level of engagement in partnering practices is still minimal within the Malaysian construction industry and indicates the typology of culture according to the dimension of organization culture among firms within the industry. Results showed that several dimensions of the current organizational culture are not feasibly conducive for partnering activities in the Malaysian construction industry. In order for partnering to be successful, the teamwork orientation, workforce orientation and innovation dimensions within the organizational culture need to be given more flexibility in the organization's daily activities.

The in-depth investigation conducted has shown that the private SME consultants feel that partnering practices are still in its infancy in Malaysia. It can be deducted from the findings that to increase the innovativeness in the industry, the consultants will have to take the lead and get involved in more partnering projects, as it allows for higher flexibility and creativity which innovation thrives on. The industry needs to collectively develop the absent key enabling factors of commitment, policies, trust and tools to facilitate partnering success. Apart from developing the absent key enabling factors in partnering, several adjustments in monitoring and enforcing by the authorities is needed to ensure the process of implementing partnering can proceed efficiently. The findings also indicate that organizational culture is critical to develop the appropriate values and behaviour which leads to high performance in partnering within the Malaysia construction industry.

In entirety, it can be concluded that organizational culture plays a dominant role in empowering successful partnering in Malaysia and has added to the body of knowledge in bridging these two concepts. This thesis has explored, identified, demonstrated and justified

the importance of organizational culture in developing the partnering framework for the Malaysian construction industry. Culture shapes the individuals, whom will be the catalyst in propelling the change required to improve the conditions of the industry. The appropriate organizational culture will facilitate the industry in developing the absent key enablers needed to facilitate partnering. This is highly critical not only in curing the many problems of the Malaysian construction industry, but also in fostering business sustainability through successful partnering relationships.

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APPENDICES

APPENDIX 1: SEMI-STRUCTURED INTERVIEW SCHEDULE

Full title of project:

DEVELOPMENT OF A FRAMEWORK FOR PARTNERING THROUGH ALIGNING ORGANIZATIONAL CULTURES IN THE MALAYSIAN CONSTRUCTION INDUSTRY.

Researcher's introduction:

This interview is aimed to gain further understanding and identify the role of organizational culture in making construction partnering a success, in order to develop a new model for construction partnering. This interview is particularly aimed at identifying the construct of organizational culture and partnering through the experience of Directors, Middle Managers or Technical Professionals directly involved with the construction projects in the industry. Therefore the interview shall focus on capturing details on partnering, organizational culture and also on how innovation and performance improvements can be produced from successful partnering.

You are welcomed to make any important point(s), as you think appropriate, without limiting to the questions stated here. Thank you for agreeing to participate in this study.

SECTION I: Researcher to complete:

General information of the interviewee	
Name of interviewee	
Job title	
Expertise/Specialisation	
Age category	
Education/Qualification background	
How many years in the construction industry? (Malaysia/abroad)	
How many years in this organization?	
Date & Venue of interview	
General information of the organization	
Name of organization	
Nature of business	
Private/Public	
Size of organization	
No of years established	

SECTION II: To know if the industry players understand the overall concept of partnering as described in partnering literatures.

1. Have you ever been involved in partnering?

   YES ☐ NO ☐

2. Could you describe the partnering process?

3. What do you understand about it?

4. What have you learned from the experience?

SECTION III: To know if the industry players are aware of partnering practices in the UK other countries, and whether they would consider it to work in Malaysia.

5. Are you aware of partnering practices in the UK or other countries?

   YES ☐ NO ☐

6. What do you feel about it?

7. Do you feel the UK partnering practices are similar to the ones in Malaysia?

8. Would such practices work in Malaysia?

9. In your opinion, how can partnering work in Malaysia?

SECTION IV: To know the type of organizational culture and structure in construction organizations.

10. How would you describe the organizational culture and corporate structure in your firm?

11. Is your organizational culture:

CONTROLLED	☐	or	FLEXIBLE	☐
INWARD FOCUSED	☐	or	OUTWARD FOCUSED	☐

12. In your opinion how strong is the presence of this culture in your company?

13. Do you feel that this company's organizational management structure is…? Please explain in detail.

14. In your opinion, how is this structure helping in partnering efforts with other

SECTION V: To know if current organizational culture is acting as an enabler or a barrier towards partnering in construction.

15. To what extent do you believe that organizational culture affects partnering

16. What can be done to improve the current organizational culture so that partnering will succeed?

APPENDIX 2: QUESTIONNAIRE

SURVEY INFORMATION SHEET

Full title of project:

DEVELOPMENT OF A FRAMEWORK FOR PARTNERING THROUGH ALIGNING ORGANIZATIONAL CULTURES IN THE MALAYSIAN CONSTRUCTION INDUSTRY.

Invitation paragraph

You are being invited to take part in a PhD research study. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information.

What is the purpose of the study?

- To review and understand the role of partnering in Malaysian construction industry.
- To review and understand the influence of organizational culture on innovative partnering.
- To develop a framework for innovative partnering which takes into consideration the influence or organizational culture in the Malaysian construction industry.

Why have I been invited to participate?

There will be some interviews which will be held on a one-on-one basis with some industry practitioners, but to get a very wide view of the nature of the problem at hand so as to propose a broad scope solution, there is a need for this questionnaire which you have been sent. Hence the reason why you have been chosen is because your opinion and personal experience is greatly valued and might help shape the ultimate outcome of this research.

Do I have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part, please simply fill in the questionnaire. If you decide to take part you are still free to withdraw at any time and without giving a reason.

What will happen to me if I take part?

This questionnaire is simply asking you to answer the following questions; it should not take more than 5-10 minutes of your time and the answers you give are completely anonymized.

What are the possible disadvantages and risks of taking part?

This survey should not cost you anything more than the time to fill it as it contains a freepost envelope. It poses no disadvantages to you.

What are the possible benefits of taking part?

There are many benefits from this study, some of them are that the findings will assist in identifying the factors of organizational culture which influence innovative partnering. These factors shall then be used to formulate a framework for innovative partnering in the Malaysian construction industry.

Will what I say in this study be kept confidential?
The data collected will be treated with strict confidentiality. A 'confidentiality statement' will be signed by both the interviewer and the interviewee in order to ensure that data obtained will only be used for the above research, and will not be disclosed to any other person, or be used for other purposes. All data gathered during the interview and survey will also be destroyed after the final results of the research has been approved and published.

What should I do if I want to take part?
To take part, all you have to do is to fill in the questionnaire and freepost it to the address on the envelope.

What will happen to the results of the research study?
The results of this survey will be used for my PhD thesis and they will be published. A copy of the published thesis will be available at appropriate University of Salford libraries.

Thank you for taking time to read this information and filling the attached questionnaire.

Please contact for further information:
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University of Salford
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Tel: +6016 496 2524 / +44753 249 7386

Section I: Profile of the Respondents

**Please mark 'X' where applicable*

1. What is your job title?

   _____

   Do you formally supervise other employees?* ☐ Yes ☐ No

2. What is your highest level of qualification?*

   ☐ Certificate ☐ Diploma ☐ Degree ☐ Masters ☐ PhD

3. In which country did you study for this qualification?

   _____

4. What is your age category?*

   ☐ 20 to 24 years
   ☐ 25 to 34 years
   ☐ 35 to 44 years
   ☐ 45 to 54 years
   ☐ 55 years and above

5. How long have you been with your current organization?*

   ☐ 0 to 3 years
   ☐ 4 to 6 years
   ☐ 7 to 9 years
   ☐ 10 to 12 years
   ☐ 13 to 15 years
   ☐ 16 years and above

6. How long have you been in the industry?*

   ☐ 0 to 5 years
   ☐ 6 to 10 years
   ☐ 11 to 15 years
   ☐ 16 to 20 years
   ☐ 21 to 25 years
   ☐ 26 years and above

7. How many employees in your organization?*

   ☐ 1 to 10
   ☐ 11 to 20
   ☐ 21 to 50
   ☐ 51 to 100
   ☐ More than 100

8. What is your organization's nature of business?*

   ☐ Contractor ☐ Consultant Engineers ☐ Developer ☐ Architect ☐ Manufacturing
   ☐ Other, please specify: _____

Section II: Understanding of partnering concept

Please mark 'X' where applicable

9. Have you ever been involved in partnering?* ☐ Yes ☐ No

For items 9-29, please indicate how you feel by circling the appropriate scale:

In construction projects, your organization will …

10. Work collaboratively with other companies in construction projects.

1	2	3	4	5
Strongly disagree	Disagree	Not sure	Agree	Strongly agree

11. Have a cooperative relationship in and out of the projects with other companies.

1	2	3	4	5
Very unlikely	Unlikely	Not sure	Likely	Very likely

12. Trust other companies that work with you so that they allow free information

1	2	3	4	5
Strongly disagree	Disagree	Not sure	Agree	Strongly agree

13. Only work with company they are familiar with and trust.

1	2	3	4	5
Very unlikely	Unlikely	Not sure	Likely	Very likely

14. Make efforts to build trust throughout the duration of the projects.

1	2	3	4	5
Very unlikely	Unlikely	Not sure	Likely	Very likely

15. Engage in flexible procurement system whenever possible.

1	2	3	4	5
Very unlikely	Unlikely	Not sure	Likely	Very likely

16. Restrict to fixed types of procurement unless required otherwise.

1	2	3	4	5
Strongly disagree	Disagree	Not sure	Agree	Strongly agree

17. Comply with client's procurement's choice most of the time.

1	2	3	4	5
Strongly disagree	Disagree	Not sure	Agree	Strongly agree

18. Open all communication channels with other companies involved.

1	2	3	4	5
Very unlikely	Unlikely	Not sure	Likely	Very likely

19. Dedicate a specific team to communicate efficiently with other companies.

1	2	3	4	5
Very unlikely	Unlikely	Not sure	Likely	Very likely

20. Have regular workshops and meetings to improve the managing of the working relationship.

1	2	3	4	5
Very unlikely	Unlikely	Not sure	Likely	Very likely

21. Initiate the formulation of partnering charter and the partnering feedback monitoring systems.

1	2	3	4	5
Very unlikely	Unlikely	Not sure	Likely	Very likely

22. Feel committed to the companies they work with without any financial reasons.

1	2	3	4	5
Strongly disagree	Disagree	Not sure	Agree	Strongly agree

23. Feel that there is sufficient regulation to govern relationships among companies working together.

1	2	3	4	5
Strongly disagree	Disagree	Not sure	Agree	Strongly agree

24. Feel that there is enough support from the government to encourage collaborative working with other companies.

1	2	3	4	5
Strongly disagree	Disagree	Not sure	Agree	Strongly agree

25. Prefers other companies who share similar organizational culture and work ethics.

1	2	3	4	5
Strongly disagree	Disagree	Not sure	Agree	Strongly agree

26. Commit to a new company easily.

1	2	3	4	5
Very unlikely	Unlikely	Not sure	Likely	Very likely

27. Adapt to another company's culture easily.

1	2	3	4	5
Very unlikely	Unlikely	Not sure	Likely	Very likely

28. Need extra efforts in order to be in sync with other companies.

1	2	3	4	5
Very unlikely	Unlikely	Not sure	Likely	Very likely

Section III: Understanding of partnering concept

For items 29-30, please indicate how you feel by circling the appropriate scale:

29. The partnering practices in the UK construction industry are similar to the ones in Malaysia.

1	2	3	4	5
Strongly disagree	Disagree	Not sure	Agree	Strongly agree

30. The same partnering practices in the UK would be successful if applied in Malaysia.

1	2	3	4	5
Strongly disagree	Disagree	Not sure	Agree	Strongly agree

31. In your opinion, how can partnering can be implemented in Malaysia?

_____

_____

_____

Section IV: Organizational culture & structure in Malaysian construction industry

32. Which one of the following best describes the organizational culture in your firm?

☐ Controlled and inward focused ☐ Controlled and outward focused

☐ Flexible and inward focused ☐ Flexible and outward focused

For items 33-39, choose one statement which applies to your organization by marking 'X' in the appropriate box.

33. Client orientation:

a. Your organization will never change their work procedures and culture to accommodate your client no matter what. ☐

b. Although your organization will never change their work procedures and culture, they will find a client who has similar culture and procedures. ☐

c. Your organization will try to accommodate the work procedure and culture to your client but will never compensate employees' priorities. ☐

d. Your organization is flexible in adjusting your procedures and culture to accommodate your client regardless of what employees may feel. ☐

34. Workforce orientation:

a. Your organization maintains a very standard way of managing employees and put employees' welfare before clients. ☐

b. Your organization maintains a very standard way of managing employees however may put client's priorities before employees' welfare. ☐

c. Your organization has a flexible way of managing employees and put employees' welfare before clients. ☐

d. Your organization has a flexible way of managing employees and put client needs before employees' welfare. ☐

35. Leadership/Management:

a. Effective leaders in your organization are those who can organize, coordinate and monitor people and processes. ☐

b. Organization is concerned with competitiveness and productivity through external partnerships and market positioning. ☐

c. Your organization operated like families, values cohesion, has a pleasant working environment, group commitment, and loyalty. ☐

d. Leaders are essentially technology champions and encourage creativity, innovation and are flexible in their management style. ☐

36. Outcome/Performance orientation:

a. Your organization emphasizes good performance and has a standard performance measurement guidance in place. ☐

b. Your organization has a fixed measurement employees' performance standards which is based on the industry. ☐

c. Your organization has a flexible performance measurement adjusted to current organizational achievement. ☐

d. Your organization has a flexible performance measurement which is based on the industry. ☐

37. Reward orientation:

a. Your organization has a standardized reward measurement system. ☐

b. The reward system in your organization is adjusted to the industry. ☐

c. Your organization has a reward system that is focused on the employees and can be adjusted according to current employee needs. ☐

d. There is a flexible reward system in your organization which is influenced by achieving the needs of the industry/clients. ☐

38. Innovation:

a. Creative and innovative procedures are very rare in your organization. ☐

b. Innovation is initiated through the demands of the client rather than the creativity of the employees. ☐

c. Innovation is initiated through the creativity of the employees rather than the demands of the client. ☐

d. Innovation is a norm and is initiated both in and out of the organization. ☐

39. Teamwork:

a. Your organization values standardization, control and a well-defined structure for authority and decision making. ☐

b. Your organization values teamwork and are focused on relationships, more specifically transactions with the industry. ☐

c. Your organization operated like families, and they valued teamwork. Employees are given opportunity and appropriate authority in decision making. ☐

d. Your organization is comprised of teams, which values flexibility, adaptability and thrive in unmanageable chaos. ☐

40. What is the type of organizational structure in your firm?

☐ Hierarchical/Divisional ☐ Project-based/Matrix

☐ Other, please specify: _____

41. Do you think this organizational structure is helping with partnering/working with other firms?

☐ Yes ☐ No

Section V: Role of organizational culture in partnering

42. To what extent do you believe that organizational culture affects partnering success?

_____

_____

_____

_____

_____

43. What can be done to improve the current organizational culture so that partnering will succeed?

_____

_____

_____

_____

_____

Thank you for taking the time to complete this questionnaire. Your effort is greatly appreciated. If you have any comments or suggestions for this research, please contact the researcher by email / address as provided in the information sheet at the front of the questionnaire.

Kind regards,
Faizatul

APPENDIX 3: SPSS NORMALITY TEST FOR DATA

To determine the normality of data, normality test was conducted on the respondents' workplace (firm of origin/nature of business) and their choices for item Q10 in the questionnaire. Table A3 below shows the output of results from SPSS.

Table A3: Tests of Normality

	Nature of business (respondent's workplace)	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Item Q10 (Collaboration & Cooperation)	contractor	.368	17	.000	.733	17	.000
	consultant	.279	20	.000	.807	20	.001
	developer	.312	18	.000	.789	18	.001
	architect	.492	6	.000	.496	6	.000
	manufacturing	.513	8	.000	.418	8	.000

a. Lilliefors Significance Correction

The above Table A3 presents the results from two well-known tests of normality, namely the Kolgomorov-Smirnov Test and the Shapiro-Wilk Test. The Shapiro-Wilk Test is more appropriate for sample sizes (<50 samples), but can also handle sample sizes as large as 2000. The data set for this research is 69 samples. For these reasons, the Shapiro-Wilk test will be used as the numerical means of assessing normality.

The results from Shapiro-Wilk Test indicates that for all respondents groups, the dependent variable (responses for item Q10) are not normally distributed, based on the Sig. value of the Shapiro-Wilk Test were all below 0.05. Therefore, it can be concluded that the quantitative data in this research significantly deviate from a normal distribution.