

The Impact of Diversification Strategy on the Construction Organisations Corporate Level Performance

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Abstract

The construction industry has expanded rapidly in the past decade. As this industry grew, it became overloaded with players that made it difficult for each one to sustain their competitive advantage and create a strategic lock in and increase its value. As a result, firms are forced to look for new ways to compete, attract clients and to reengineer their business practices effectively and efficiently. Diversification is a strategic direction that many construction firms are pursuing so that they can improve the performance level of their firms.

This research will investigate the diversification strategy as a strategic direction at the corporate level. Diversification is a form of growth strategy that is divided into two routes; related and unrelated. This study investigates the impact of diversification on the performance factors financial, productivity and quality. The SPSS will be used for the qualitative research. The sample population considers 100 respondents from local based contractors which are also studied as part of the case study analysis. 5 firms will be critically investigated and 20 interviews will be conducted to capture the nature of diversification strategies in these firms and the impact it has on overall corporate performance

This dissertation is aimed at testing three propositions that contribute to the literary texts on the relationship between diversification strategy and firm performance. There are other issues that determine the success of diversification to positively affect performance that will be further investigated. These include corporate capabilities, vertical integration strategies and performance measurement methods.

The findings achieved have been supported by prior research with new future directions suggested.

Keywords: Diversification, Performance, Strategy, Construction, Corporate

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Chapter 1

Introduction

1.1 Background

Diversification strategy explains which strategic direction a firm chooses to follow. It determines the scope of an organisations operation and is considered to be the foundation of corporate strategy (Rumelt, 1991). It is claimed by widespread theory that conclusions on diversification strategy are not established yet as the research results conducted in many studies vary dramatically (Markides and Williamson, 1996). As a result, research into determining the connection between diversification-performance relationship has attracted many scholars and academics alike (Chatterjee and Wernerfelt, 1991; 1998). Accordingly, overviews in this topic indicate that the literature theory is not only distinguished by the diversity of theoretical points of view, methods and techniques, but also by the contradicting conclusions and propositions made (Bowen and Wiersema, 2005). The conclusions conveyed in the diversification-performance relationship are inconsistent and there are very few points to generalise. The industry structure and composition has pushed firms to consider diversifying into other related and unrelated fields as the financial inflows from construction could be very dynamic. Studies conducted on this topic reveal that corporations engaged in related diversification are more superior than their competitors in the long term. The rationale is being that firms with portfolios displaying related businesses realise more benefits, especially synergy as a result of

utilising resources, know-how and valuable assets across businesses (Markides and Williamson, 1996). Many researchers have implied that specific diversification directions are required to maximise performance (Togly et al, 2005). These include strategies such as vertical integration and horizontal strategy. Vertical integration is the most common route implemented in related diversification because benefits are spread out more easily and controlling is not as complex. Horizontal strategy may increase the business scope of an organisation, but in many cases, it involves unrelated business fields (Varadarajan, 1986).

As the construction industry in the United Arab Emirates is highly competitive, survival of contracting firms becomes harder as their numbers tend to increase and the number of projects decrease. Faced with the dilemma of surviving with minimal profits or facing high exit costs, firms have started to look for other ways to survive without having to leave their core business; building contracting. For this reason, the firms investigated in this research have chosen diversification as a strategic direction to strengthen their position. However, diversification is a wide broad topic, consisting of many forms; related or unrelated, intensity levels; high, moderate or low, type; strategic or operational, structure; vertical integration or horizontal coordination and many others. No matter what the forms, levels or types chosen by contractors to follow, their main aim from diversification is to increase corporate performance levels. Performance indicators that contractors choose to measure vary depending on the firm's objectives. Some firms choose financial indicators alone; others combine several together, such as market and productivity. This research will measure three perspectives of performance measurement; financial, client satisfaction and employee productivity in both related and unrelated diversification. The impact of both strategic and operational relatedness will be measured against the same performance

variables as well. The intensity of diversification plays an important role in determining the success of the strategy.

Performance measurement varies among firms as there is no prescribed way to conduct it. Almost all the research conducted during the 1970s and 1980s emphasise on financial measures as indicators of performance levels. However, studies conducted later put forward that there are other factors that can be better indicators of performance (Palich et al, 2000). Examples include market factors, employee measures and client satisfaction. The Balanced Scorecard, developed by Kaplan and Norton, encompasses all the dimensions into one model. The Balanced Scorecard has been implemented by many organisations in many industries, and so far, it has been reported to be efficient (Markides and Williamson, 1996). Performance measurement has been a topic of debate as to how often it should be conducted. Some firms find it essential that performance is reviewed quarterly, while others do it yearly, and in rare cases, only when milestones are covered (Tallman and Li, 1996; Christensen and Montgomery, 1981).

The relation between diversification and performance is not agreed upon yet in literature. There are various conclusions to the nature of the linkage between the two variables and academics argue that there are other factors that affect the relationship significantly. There are several ideas on the connection between diversification and performance, with some scholars indicating that related diversification has better impact on performance than unrelated diversification. Others support this view by adding that related diversification could be beneficial up to a certain level only, if it is exceeded, performance declines (Palepu, 1985; Rumelt, 1982). Some research shows that related diversification alone is very risky; therefore it should be combined with unrelated diversification to reduce risk.

Construction firms have chosen diversification as a growth strategy over the last decade (Wang, 2001; Low and Jiang, 2003). This makes the diversification strategy a key research issue especially that researchers have identified it with organisational performance. However, the issue is not whether diversification affects performance, but rather, the kind that impacts performance most. This study will discuss diversification strategy as applied in the construction sector. The research into the issue of diversification performance linkage is multi-faceted as studies show different results and contradicting conclusion views. Empirical research has showed many effects of the diversification on corporate performance, negative correlations, and positive correlations and in many studies no linkages at all. Researchers have supported mainly the positive impact of related diversification in the manufacturing industries (Fitzgerald et al, 1991). The issue faced by firms is to increase performance to the maximum level possible but at the same time reduce costs, create value for the firm and the client, and achieve synergy. This research will investigate which type, level and direction of diversification is desirable to attain excellent performance in terms of financial standing of the firm, client satisfaction and employee productivity. Improving this management concept will definitely contribute to the corporate success. This research will aim to provide a direct correlation between related diversification and firm performance.

1.2 Market Overview

It is important for this research to understand the environment of the firms to be discussed. Construction industries differ from one country to another, and as this

research specifically considers construction in the UAE, the competitive environment has to be introduced briefly.

The United Arab Emirates (UAE) construction sector has reached an exceptional during the past decade. Since the early 1970s, the construction industry commenced to increase as to meet the growing need for basic infrastructure. The private sector construction is active in the UAE. There are 12,000 active contracting firms in the UAE. This includes large, medium and small contractors, both general and specialists. The UAE's construction industry was highly active until the economic crisis of 2008, when operations started to slow down. Nevertheless, compared to other countries in the area, the UAE is considered highly active. For example, the Kuwait National Bank released in August 2009 a report estimating that 45% of the GCC construction activities are in the UAE (Dubai Economic Department, 2010). Consequently, the value of the ongoing projects is approximately AED 3.5 Trillion. It is speculated that the construction sector will decline until 2012 as a result of low oil prices, increasing interest rates, decline in real estate prices all negatively affect the confidence of potential investors (UAE Interact, 2010). The Dubai Economic Department reported a decline of 85% in construction contracts since the last quarter of 2008.

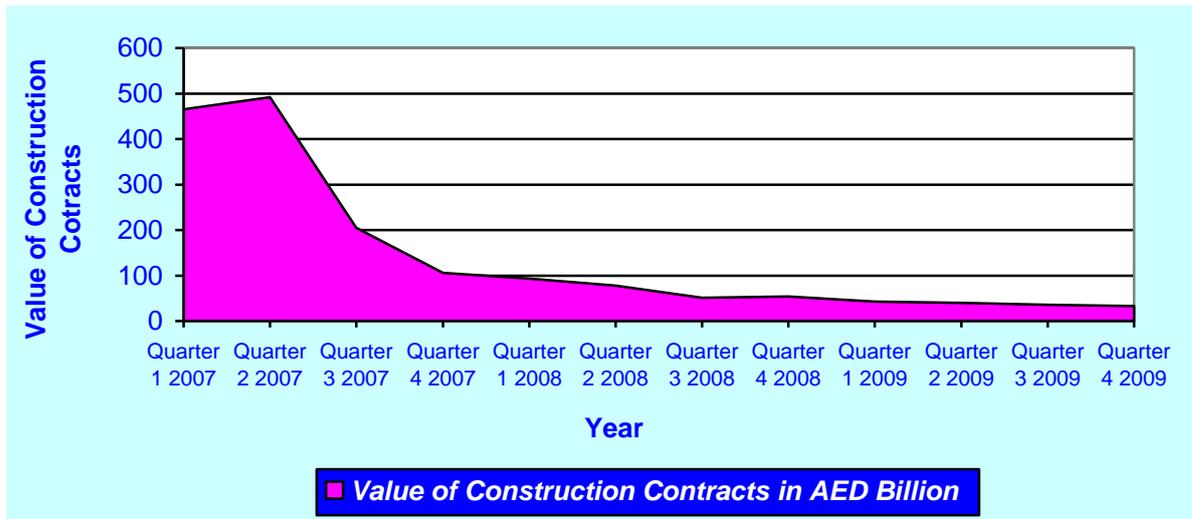


Figure 1: Value of Construction Contracts awarded in the UAE
 “ITP Construction, 2010”

As shown in figure 1, the value of construction contracts awarded in the UAE construction industry has been continuously declining over the years 2008 to 2009. This shows an unattractive market for both investors and firms. Many construction companies have already closed down their operations as a result of the economic crisis. It’s estimated that by the end of 2010, at least 300 more construction firms will close their operations unless they find another source of income because construction projects are declining (ITP, 2010).

1.2.1 SWOT Analysis

Strengths

- Much of infrastructure spending is supported by the government such as transportation, roads and utilities
- Private investments in construction create a desired investment environment
- To attract potential investors to the UAE, state owned agencies e.g. DEWA (Dubai Electricity and Water Authority) are acquiring stakes in many projects

Weaknesses

- Unemployment is increasing as more construction firms declare themselves inactive
- Project finance processes have either been delayed or discontinued therefore affecting the progress of many projects
- The rapid growth in the commercial and residential sectors did not match the ability of the utilities sectors. This created completed buildings that were left without water and power making them unsuitable for occupancy

Opportunities

- Steel and current cement prices have declined making project cost lower
- After the oil and gas sector the construction industry is the second most important sector in the UAE
- Government encourages private development in the construction sector

Threats

- Limited credit availability on construction projects impacts their completion
- Rapid decrease in construction demand

1.2.2 Porter’s Five Forces Industry Analysis

All firms in any industry maintain their competitive advantage by reacting to five forces (Porter, 1985)

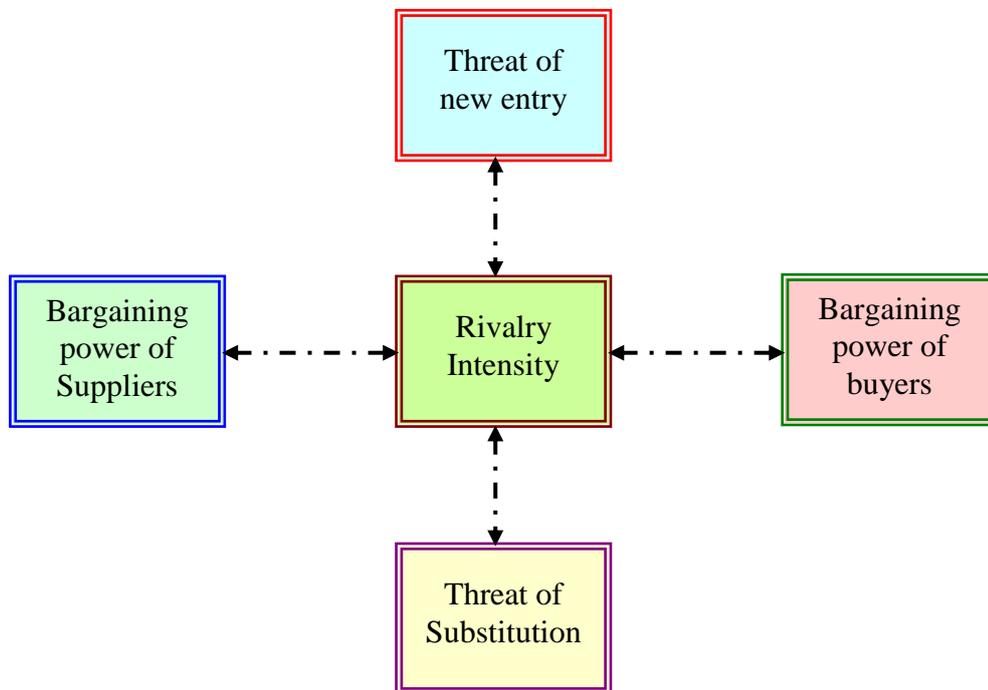


Figure 2: Porter’s Five Forces Model
“Porter, 1987”

The bargaining power of buyers and suppliers, threat of new entry and threat of substitution all affect the intensity of competition within the industry. It is recommended in dynamic environments that the five forces framework be conducted at least twice per year (Porter and McGahan, 1997).

Analyzing the UAE’s construction industry by using the Five Forces Framework concluded the following:

- Threat of new entry is low due to:
 - Excessive investment requirements
 - Experience curve takes long time to gain
 - Difficulty in achieving economies of scale
- Bargaining power of buyers is high due to:
 - Low project cost because of crisis
 - Many construction firms willing to take any project
 - Low switching costs
- Bargaining power of suppliers is low due to:
 - Many contractors, engineering firms and consultants and few projects
 - High switching costs and exit barriers
- Threat of substitutes is high due to:
 - Many construction firms are willing to take on projects with similar or lower prices and better quality performance

As a consequence of the above forces, the industry rivalry reflects the following characteristics:

- Strong competition among firms
- High growth in the construction sector
- Increasing closure costs make even the unprofitable firms difficult to close down
- High price competition
- In conclusion, the industry is unattractive

1.3 The Corporate Challenge

Corporate executives of contracting firms face two challenges when looking into the future:

- 1) Forming a long term strategic management practice to increase performance, and,
- 2) Sustain performance improving levels throughout the entire organisation.

The first challenge will be critically reviewed in the first chapter within the strategic management practices of firms. Studies indicate that research into forming the suitable strategy recommended diversification as a main strategic route (Suzuki, 1980; Hirsch and Lev, 1971; Palich, 2000; Nayyar, 1993). The challenge lies whether the diversification should be related or unrelated. Further lies the paradox of following strategic or operational relatedness. The second challenge forces firms to analyse the suitable strategic level intensity; high, moderate or low.

1.4 Problem Statement

Construction firms have been engaged in many strategic directions to increase corporate performance. Diversification is one of the directions that are considered. However, some academics are concerned whether diversification actually increases corporate performance levels. Many studies argue that related diversification is better for the firm than unrelated diversification, and vice versa. The problem investigated in this study is whether related diversification is beneficial to the performance levels and if so, to what degree and which direction. Diversification levels range between low, moderate and high. Also, diversification directions are categorised into two types; strategic and operational. This research will aim to identify the optimal diversification degree to increase corporate performance and the most suitable direction to implement.

1.5 Aims and Objectives

The aim of this study is to provide more information on the relationship between diversification strategy and corporate performance. The following objectives are established to guide the research effort:

1. To find out whether related and unrelated diversification has the same effect on the performance level
2. To identify the relationship between diversification and organisational performance
3. To obtain the optimal level of diversification needed to maximise performance
4. To identify which directions, operational or strategic have the most impact on corporate performance

1.6 Research Hypothesis

The following propositions are made to be tested in this research:

1. Related diversification has a positive effect on firm performance more than unrelated diversification
2. Firms with moderate levels of related diversification exhibit better performance levels
3. Operational relatedness has more positive impact on firm performance than strategic relatedness

1.7 Dissertation Organisation

The structure of the research will be as follows. Chapter 2 will present literature review on the strategic management process in construction firms and the different tools used to build long term corporate strategies. The different diversification

methods, related and unrelated, vertical integration, and horizontal coordination will be explored. The dimensions of relatedness within construction will be discussed as they are essential for building the second part of the literature review. Benefits and costs of diversification will be reviewed and its significance on the strategic direction is critically investigated. Performance measurement in construction firms is discussed focusing on the different frameworks implemented. Chapter 3 specifically investigates the relationship between diversification strategy and organisational performance. The different views, positive relationships, negative connections and curvilinear relations are explored. Finally, the hypothesis formation will be explained. Chapter 4 is the methodology which will include two methods; survey and case study investigations. The data will be collected by a survey questionnaire which will be composed of questions to find out the diversification strategies the firm is currently engaged in and the firm's performance levels. Diversification and performance will be compared by following a correlation analysis. The case study analysis will include reviewing organisational financial reports and other documents. All the information will be incorporated to investigate the proposed hypotheses. The firms considered are 5 contracting firms operating in the UAE. They are all of similar size and carry out similar projects and are all engaged in diversification strategy. All firms are privately owned with no government ownership at all. The performance measures to be used in this research are categorized into 3 fields. Financial factors, client satisfaction and employee productivity. There will be five variables; annual income, operating profits, return on assets, client satisfaction and revenue per employee. Chapter 5 includes the data analysis, where the firms chosen for case studies will be investigated. Chapter 6 will discuss the data compiled from the survey questionnaires by using the correlation analysis to test the three propositions made for this research.

Finally, chapter 7 will include the research summary, conclusions and recommendations.

Chapter 2

Literature Review

2.1 Strategic Management Process

Competitiveness in Construction

The topic of competitiveness has gained high attention and is research intensively in corporate strategy. Despite its acceptance on a wide scale, practitioners have not yet agreed on a single definition (Porter, 1980). It is very important to build on the knowledge of competitiveness so industrialists are able to form their competitive strategies, one of them being diversification. Although there is no universally accepted definition of competitiveness, its concept and objective is agreed upon: to increase long term performance (Markides, 1995; Chandler, 1962). The ability to achieve competitiveness in a heterogeneous industry such as construction is vital as it encourages sustainable growth (Steiner, 1975).

Many academics refer to competitiveness in terms of productivity such as capital productivity or labour productivity (Christensen and Montgomery, 1981). Porter and McGahan (2003) identify competitiveness as being much wider than productivity. Their argument is that productivity can be problematic to measure as it often includes issues such as value creation. Measuring competitiveness produces new information which can be used by stakeholders to generate innovative plans or strategies for the future (Christensen and Montgomery, 1981). It is agreed among researchers and practitioners alike that competitiveness is best analyzed on both a firm level and an industry level (Porter and McGahan, 2003). This is investigated through three main schools; competitive advantage school, resource based perspective and core

competence school and the strategic management school. The competitive advantage school indicates that firm competitiveness, as put forward by Porter (1980) is gaining competitive advantage through exploiting opportunities that are available in the industry. The competitive advantage school analyses the industry structure. According to Christensen and Montgomery (1981) and Porter and McGahan (2003), the firm competitiveness can be analyzed further by conducting an industry analysis such as PESTEL framework and Porter's Five Forces model. Tongli and his co-authors (2005) propose that firms should be looked at as a collection of resources in order to understand their competitive position. Porter (1981) also suggests that an internal resources analysis of a firm is essential in order to know what a firm is capable of and what distinct competences it can offer to gain competitive advantage. This also helps to identify the valuable resources within a firm and how they can best be managed. However, critics believe that an internal scan of a firm should not be carried out solely because it would ignore industry conditions.

The second school, the resource based view (RBV) analyzes the resources developed in an organization (Prahalad and Bettis, 1986). The propositions put forward by the RBV are:

1. Competitive advantage is not guided by the structure of the industry but by the resources owned by the firm
2. Not all firm resources are rare, valuable and non substitutable. That is, not all resources can bring competitive advantage to a firm
3. Resources required to develop core competences should be continuously developed and strengthened
4. Effective and efficient deployment of resources is as important as the resources themselves

(Prahalad and Bettis, 1986)

It is important to note that so far, both the competitive advantage school and the RBV School emphasise on resources as being major source of competitive advantage. However, a limitation of the RBV School is that it does not give consideration to the industry structure. (Porter and McGahan, 1997; 2003). It will be more effective if the two schools were considered together.

The third school, strategic management identifies actions and decisions that determine the long term strategy and performance of an organisation. The strategic management school is composed of tools that manage procedures (Prahalad and Bettis, 1986). This includes environmental analysis, strategy planning and formulation, strategic implementation, and finally strategy control and evaluation. Every stage and procedure is constituted of tools and frameworks to analyse both the external and internal environment. The strategic management school embraces both the competitive advantage and RBV schools, therefore it is considered more practical by practitioners and researchers (Porter and McGahan, 1997). For sustaining competitive advantage it is critical that the strategic management school perspective be applied continuously as the industry structure is dynamic and so are internal resources (Prahalad and Bettis, 1986).

Measuring competitiveness of construction firms is in no doubt the first essential step in improving performance (Porter and McGahan, 1997). Lou (2001) developed a study to measure contractor's competitiveness which combined the competitive advantage perspective and the RBV. An index of contractor's competitiveness was formed on an IT program. Lou (2001) recommends that this system can be applied to three standard construction operations: analysing competitor competitiveness, classifying contractors depending on their competitiveness and propose eligible

contractors for the bidding process. Nevertheless, this study was concluded to be valid for the Chinese Construction sector only as its composition and environment is indigenous.

However, measuring competitiveness still remains a challenge in the construction sector. Researchers suggest that the choice of strategic direction if based on careful strategic analysis can be the route to achieve competitiveness (Prahalad and Bettis, 1986). A study conducted by Dubofsky and Varadarajan (1987) showed that construction firms choose different strategies to improve their competitive position. The strategies chosen varied between differentiation, focused, hybrid, product and market development and diversification. Having said that, Alkhafaji and his associates emphasise that vertical integration strategies i.e. related diversification helps attain competitive advantage. However, research into this topic needs further advancements before any conclusions can be drawn.

2.1.1 Strategic Management Dynamics

The construction sector globally operates in a highly competitive and turbulent environment. Price et al (2003), have examined the long term strategy formulation process in construction organisations and decided that thinking strategically has become critically important in the construction sector because of the industry's composition.

Empirical studies on strategic management is said to have come into view during the 1960s (Hoskisson and Hitt, 1990). However, there has been insufficient interest given to strategic management in the construction industry because of three main causes:

- 1- The construction industry is composed of a variety of sub sectors, e.g., residential, commercial, industrial and each includes many groups of

stakeholders each bound with fixed contractual agreements in any given project (Tallman, and Li, 1996). All the complexities associated have raised concerns for researchers to conduct insightful investigations.

- 2- Construction is often viewed as a low growth and low tech sector, therefore making it unattractive to researchers as they assume it is not dynamic enough to research (Varadarajan, 1986).
- 3- Large industries such as oil and gas and auto are made up of dominant and powerful organisations with substantial market presence (Weston, 1970). This organisational importance had many sources cover their strategies and actions. On the contrary construction is extremely fragmented with data and information on single organisations limited to find. This increases the difficulty of investigating management issues in construction businesses.

In the meantime, issues in corporate strategy are not considered by researchers and owners alike as they are too rooted in the project management side of construction. They are too involved in managing one project at a time and ignore the importance of looking at the whole corporate strategy (Teece, 1982). The collapse of leading firms, for example, Stone & Webster in the U.S. and Philipp Holzmann of Germany exemplify the fact that excellent technical competence can often fail if it is not supported by long term corporate strategies. The significance of these issues is raised in the UAE, where the construction industry and the market environment are continuously changing. To increase performance standards and competitive positions, construction ventures have look beyond their corporate limits (Tongli, 2005).

2.1.2 Strategic Management Process Framework

The complexity of the strategic management process combines several activities that should be carried out by many individuals over a long period of time. To guarantee the effectiveness and efficiency of the process, key activities have emerged as being critically significant during the strategic management process (Clark et al, 2001). The activities in status order are as follows:

1. Assess the competitive position of the organisation
2. List the critical success factors
3. Establish key performance indicators
4. Execute an audit internally

(Clark et al, 2001).

Although the strategic frameworks differ among organisations, their content is very similar. They all consist of the above important activities in addition to other supporting operations such as evaluating customer intelligence and identifying dynamic capabilities (Clark et al, 2001). An extensive range of tools and techniques were also recognised as closely related to performing the activities listed earlier.

These are:

- SWOT Analysis
- Portfolio Analysis
- PEST Analysis
- Competitor Analysis
- Resource Audit
- Balanced Scorecard

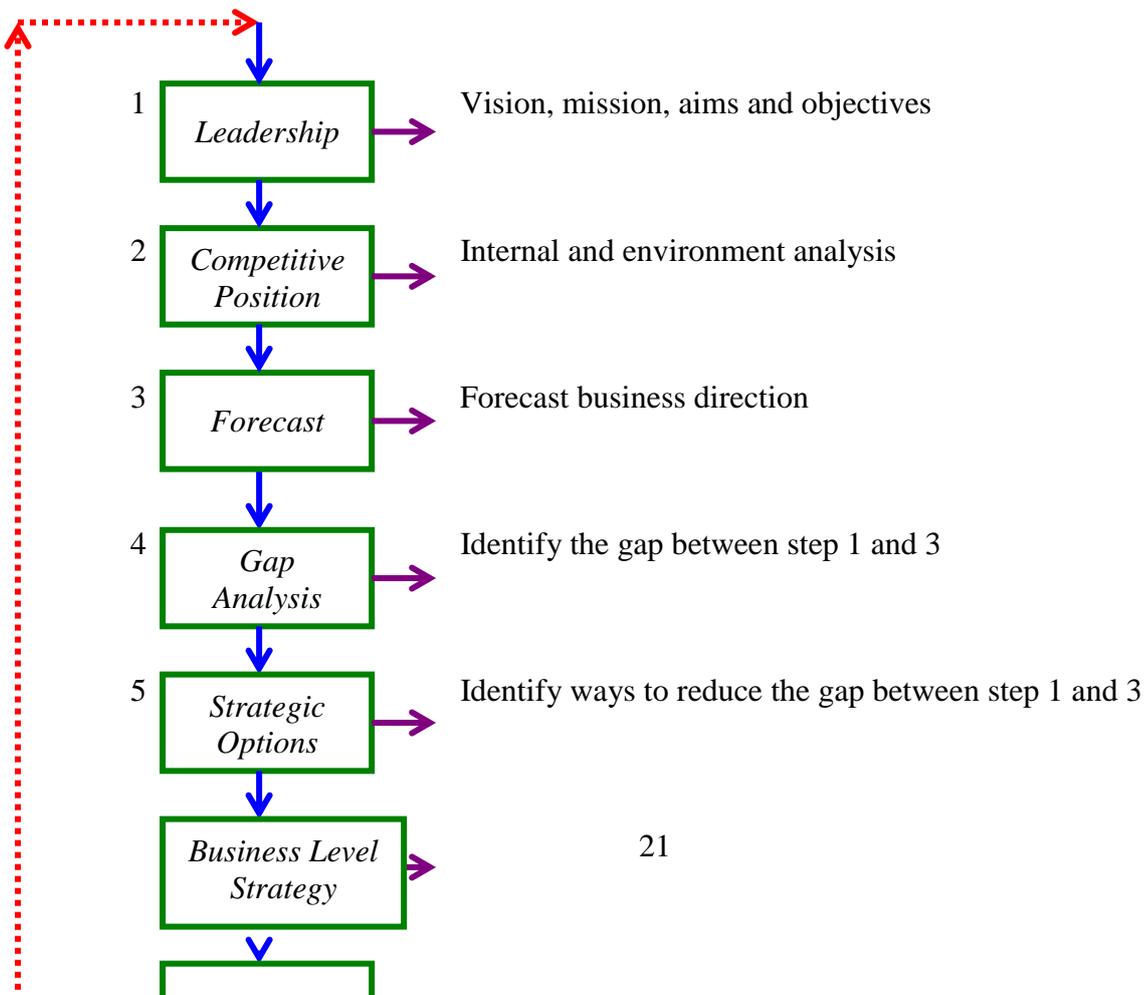
(Clark et al,).

2.1.3 Internal Factors and Outputs

As with any strategic process, there are key internal factors that govern its success, as well as outputs that determine its performance. In line with Hyde's (1992) conclusion of interviews conducted in over 90 organizations in the construction field, the key internal factors that determined the strategic success are teamwork, communication, resource availability and supporting technology. On the other hand, the outputs of the strategic process which determined its performance level include a unified understanding of the aims and objectives of the strategic plan, a financial plan and finally, a resource plan to outline the requirements of full implementation of the strategic process. The general point of view among the organisations interviewed by Hyde (1992) is that strategic management should be an ongoing process with semi annual strategy updates and quarterly performance reviews being common and involve all personnel engaged in the activities.

2.1.4 Process Framework

The approach to develop strategy among construction organisations varies dramatically depending on the size of the organisation as well as the resource requirements (Hyde, 1992). However, several authors such as Price et al (2003), Junnonen (1998) and Hussey (1997) recommend that processes stay flexible and are adaptive to change when needed so that organisational requirements are satisfied. Process frameworks range from simplified flowcharts to large and complex structures. Although the undertaken strategic activities are similar in all processes, the manner in which they are executed determines its complexity. Figures 3 and table 1 are process frameworks developed by Hussey (1997) to guide the strategic management of construction firms. Organisations can implement them as they are or alter some activities if they wish depending on the strategic requirements.



- 6 Choose a suitable business strategy i.e. differentiation price or focus
- 7 Plan implementation
- 8 Record results of step 7
- 9 Compare results of steps 7 and 8 and identify the difference (if any)
- 10

Figure 3: Simplified Process Framework Involving 10 Steps
 “Palich et al, 2000”

<i>Phase 1</i>	<i>Phase 2</i>	<i>Phase 3</i>	<i>Phase 4</i>
<i>Inputs</i>	<i>Strategic Tool Kit</i>	<i>Implementation</i>	<i>Output</i>
Conduct market and economic forecasts	SWOT Analysis	Communication	Identify organisational strengths and weaknesses
Generate industry environment reports and competitor information	PEST Analysis	Staff training/ workshops	Increased competitor understanding
Define share holder expectations and perceptions	Porters five forces	Monitoring	Identify profitable opportunities
Conduct internal audit	Identify CSF	Measuring performance	Improved strategic choices

Conduct supplier, customer and staff surveys.	Identify KPI to achieve CSF	Set resource commitment	Outline change plan
Analyse organisational financial history and current position.	Balanced Scorecard	Benchmarking	Understanding mobility barriers
Re-evaluate mission, vision and objectives.	Grass Root Analysis	Collaboration among teams	Take opportunity of strategic gap
	Value Chain	Coaching	Achieve strategic lock in
	Resource Analysis	Provide central resources	Execute corrective action
		Goal setting	

Table 1: Structured Process Framework Involving Four Phases
“Grant et al, 1988”

As Price (2003) put forward, there is no correct way to develop and implement a strategy. The key to a successful strategic process is to get the right balance between the strategic tools, capabilities available and resources. If the right balance is achieved, the outcome will be successful. There is no strategic process that acts as a prescriptive formula; instead each organisation should develop its strategic management framework according to its individual needs. Price (2003) has proposed a framework for construction firms to use as a starting point for formulating a strategic development process. This framework was formed by integrating key components of best practices within other organisations (Price, 2003). This framework is appropriate to both large and small firms. However, smaller firms might have to rationalize same components within the framework as they might be more

suited to larger organisations (Price et al, 2003). The benefits of the presented framework in figure 4 are as follows:

- Coordinating key phases more efficiently by saving time and resources
- Instead of generating new data, use existing data within the firm
- Encourage knowledge management by identifying the missing gaps between the phases

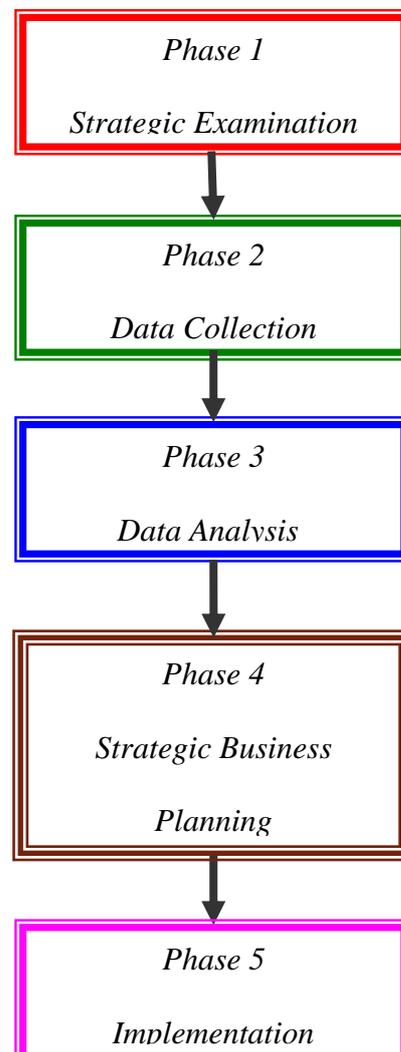


Figure 4: Strategic Management Process Framework for Construction Firms
“Amit, 1998”

2.2 Diversification Strategies

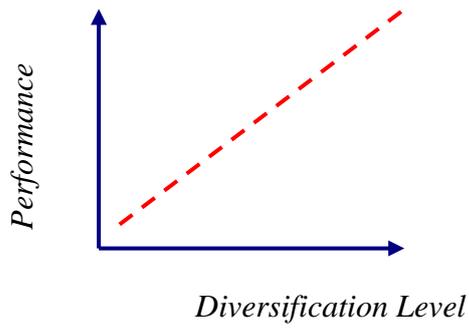
Most often, diversification strategies are implemented to broaden company's activities by increasing services, markets and products. The objective of diversifying is to enable a firm to enter other business units that are divergent from prevalent activities. Diversification strategy in itself does not exist in one single form. The different forms will be investigated in later sections. Most literature conducted on diversification agrees that it is a form of growth strategy (Amit, 1998, Lyon et al 2002, John et al 1999). Many organisations implement two or more forms of growth strategies, in order to speed up the increase in market share or sales (Jacquemin et al, 1979). In its early days, diversification came about either by accident or pure intuition. Embarking a conglomerate diversification was a way to decrease the risk involved in the existing operations of the business (Mueller, 1977). As identified by Montgomery (1994), there are three primary reasons that result in a company's conclusion to diversify. The first reason is the Market – Power belief which assumes that as a firm becomes conglomerate, it can obtain stronger position. The second one is identified as the agency attitude. This is when managers implement diversification to uplift the status of the firm and provide protection to the financial conditions of the firm in times of economic turbulence. Finally, the third reason known as the resource view encourages diversification when there are excess resources in the firm that can be elsewhere and be more productive.

2.2.1 Diversification Perspectives

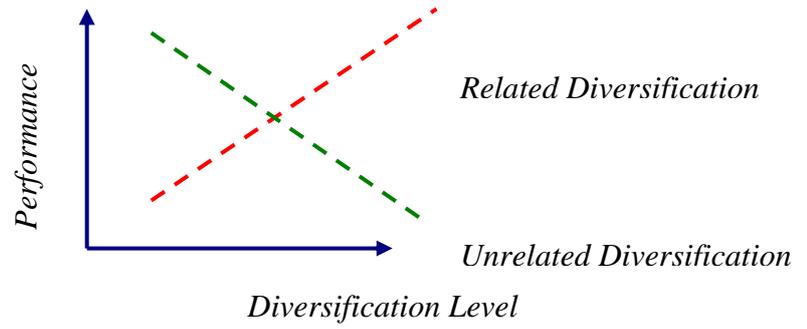
Ansoff (1957) was the first to articulate on diversification strategy. He proposed that diversification refers to new product development or new market entry. Ever since, diversification is associated with entering a new industry or field (Rumelt, 1982).

Montgomery (1994) states that diversification strategy is apprehended from three different but vital perspectives: The market-power, resource-based and agency perspectives. The market-power view explains that organisations diversify in order to maximise profit and gain more market power. Diversified organisations always gain power over non-diversified firms as Montgomery (1994) suggests. As explained by Rumelt (1982) market power is the ability of the firm to have big impact at the industry and is able to shape pricing and supply of products. On the other hand, the resource based perspective implies that the main motivation for organisations to diversify is the resources (Rumelt, 1982). It is believed that organisations can produce synergy by following diversification. Synergy is created by sharing resources, assets, capabilities and competencies which will either force operating costs down or allow the firm to charge a premium because by utilising its resources it can differentiate its offerings (Montgomery, 1994). Also, Chatterjee and Wernerfelt (1991) imply that the different resources skills owned by a firm determine the type of markets to enter. Lastly, the agency perspective is linked to the manager's ability to control a broad range of activities (Montgomery, 1991). Increased diversification, under the agency view translates into fewer profits, therefore decreased performance (Rumelt, 1982). The agency views also propose that as firm ages, it will automatically be involved in diversification which is why after a period of time, firm performance falls (Michel and Shaked, 1984).

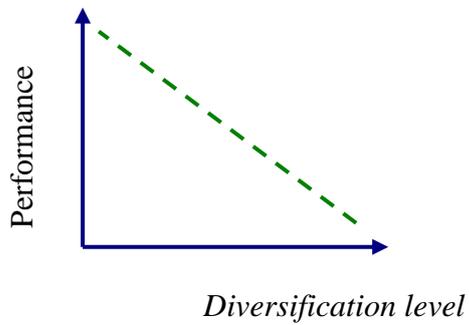
It is said that as a firm becomes order in its industry, it gains more confidence to acquire businesses and becomes more experienced to vertically integrate in its supply chain. Relating the three views to organisational performance, the market power perspective explains that diversification improves performance. Grinyer et al (1980) dictate that as firms grow into more businesses they gain more power which allows them to exert influence on the competitors within the industry. The market power view expresses that if a firm keeps operating in a single business, after some time it will be unprofitable (Rumelt, 1982). The agency view, on the other hand, proposes that if diversification is pursued to fulfil management desires and not to maximise profit, it will ultimately bring the performance levels down (Montgomery, 1991). Finally based on the argument of the resource based view, Rumelt's (1982) research indicated that firms who were able to leverage skills and resources among other activities were able to demonstrate optimum performance results when compared by those firms who were unable to share anything. The relationship between diversification and performance from the three perspectives explained is illustrated in figure 5.



(a) The Market-Power Perspective



(b) The Resource-Based Perspective



(c) The Agency Perspective.

Figure 5: Three Perspectives to Explain the Diversification Performance Relationship
 “Rumelt, 1982; Montgomery, 1994”

2.3 Conceptualisation of Diversity in Firms

Conceptualisation of diversifying strategies has been witnessed in the construction industry over a long period of time. The emphasis was greatest on innovative processes exploiting new markets and achieving new products (Christensen et al, 1981). Several researchers have identified diversification from different angles. As described by Steiner, diversification involves diverse knowledge, processes and skills in order to achieve new products and enter new geographic areas (Steiner, 1975). Gort describes diversification as it produces heterogeneous outputs to cater other markets where shifting resources would be difficult (Gort, 1962). Berry defines the concept of diversification as simply increasing the capacity of the firm's active operations and industries (Berry, 1994). Schwartz and Kaimen (2000) believe that diversification is when a firm operating in one industry produces outputs which are classified under another sector (Schwartz et al, 2000). Hopkins and Pitts (2000) perceive diversification as when broad business operates simultaneously. Finally according to Hamilton and Booze, diversified firms are those that extend their business base in order to decrease overall risk and improve the growth rate of the firm (Hamilton et al, 2001).

2.4 Classifying Diversification in Construction

Literature has identified two main streams of diversification, Concentric and Conglomerate. However, as Nayyar (1992) stated, concentric diversification is more complicated as it has several sub-categories with it.

Concentric diversification also known as related diversification occurs when the products or markets added to the current business are related, share common capabilities and require similar resources (Palepu, 1985). Under related diversification, the new business ventures benefit from shared R&D, resources, knowledge and the general brand development (Markides et al, 1996). Related diversification strategies is made up of vertical integration strategies; backward and forward) and unrelated diversification is mainly concerned with horizontal integration.

1. Vertical Integration: This is often the first choice for construction firms when considering diversification. It involves the firm investing in its supply chain activities either by forward or backward integration (Lewellen, 1971). Background integration is concerned with the activities that act as inputs to the business. Many large Contractors acquire supplies of raw materials such as aggregates steel and iron makers. This provides the Contractors with more control over its environment and increased technological expertise and intelligence (Palepu, 1985). Other common examples of backward integration within construction include project financing and acquiring the manufacturing of the building machinery (Suzuki, 1980). On the other hand, forward integration looks into the engagement of the company in activities involved in the output of the operation. The involvement of property develops in sales and marketing is a form of forward integration. However, it is vital to note that

strategies involving vertical integration have one main notable disadvantage in construction. When a firm invests in concentric diversification and vertically integrates it risks losing profits for the entire organisation. For example if the demand for high rise buildings fall, the business units for cement will fall as well. Within the field of construction, forward integration areas lie in construction maintenance of construction, finishing and handover and project management services (Pablo, 1994). Vertical integration will be investigated in detail in a later section

2. Horizontal Integration: This describes acquiring operations that act as complements to current activities. Interior design is complimentary to the construction industry and so is transportation (Pablo, 1994). The risk involved in horizontal integration is far less what can be seen in vertical integration because the businesses can be more conglomerate or unrelated. For example, if demand for building more roads has decreased, instead of losing revenues and resources the business focus can shift to traffic management which is also considered an innovative new field and highly demanded. Conglomerate diversification generally noted as unrelated diversification (Rumelt, 1982). This occurs when one organisation diversifies into domains that are irrespective of its actual business line. Eight percent of Europe's construction firms are engaged in conglomerate strategy in areas such as oil and gas, retailing and telecommunications (Meyer et al, 2003). The main objective of conglomerate diversification is to increase the profitability of the organisation by acquiring other businesses. As Mishina et al (2004) imply; the aims of engaging in unrelated diversification are because the current opportunities in the business are restricted. Other reasons for pursuing unrelated diversification

are to increase the growth rate of the company. Most often, an increase in growth can imply prestige and power making the firm attractive to investors. However, Pitts and Hopkins (1982) state that there are drawbacks to following conglomerate diversification. The prime disadvantage is the rise of administrative costs and issues connected with handling unrelated ventures. Competition for resources is another downside that can create rivalry within the firm (Markides et al, 1996).

2.5 Perspectives on Vertical Integration Context

Vertical integration is often the first choice of diversification strategies that organisations consider when expanding their operations. Most often, the competition intensity forces firms to integrate (McDougall and Round, 1984). Research investigated by academics such as Palepu (1985) and Prahalad and Bettis (1986) suggest that varying levels of integration ranging from broad to high can yield many benefits to the firm, especially in competitive environments. The successful implementation of vertical integration is determined by how broadly the firm is integrated at one point in time, the percent of each operation to be carried out internally, and finally, the suitability of the venture (Grant et al, 1988). Strategy research has devoted numerous studies that lead to choosing vertical integration. The motives are grouped into four categories; industrial, internal, financial and quality.

1. Industrial. The attractiveness of the industry often determines if a firm should integrate more in it. If the industry was in a growth phase and reaping profits is fairly easy, then the firm should definitely integrate (Palepu, 1985). Formation of strategic groups within an industry is also a motive for the organisation to integrate (Stimpert and Duhaime, 1997). For example, in

construction, contractors, engineers, and project management firms form separate strategic groups each with its own leader. The strategic groups have two different characteristics that defines them; the scope of a firms operations and resource commitment. Also, if supplier power is weak within the industry, vertical integration can increase the control over the supply chain. In addition, Nayyar (1993) suggests that a strategic gap within the industry is another motive to vertically integrate as it recognises an opportunity that is not exploited by competitors yet. Vertical integration enables firms to enter that gap less costly than new comers as economies of scope already exist, and so profits will be realised more quickly.

2. Internal. Elements that are related to the internal growth of the firm are another cause to vertically integrate. If there is a surplus of tangible resources such as finance, labour and plants that are being idle, it is better to utilise them in a business line that can benefit the firm (Hill and Hoskisson, 1987). Intangible resources are another cause for the firm to vertically integrate. Nayyar (1993) implies that if an organisation owns inimitable assets such as intellectual capital, e.g. knowledge and information, and which when put in use by another firm can produce impressive results, it would be more beneficial for the firm to own the whole chain, i.e. vertically integrate. For example, regular large clients have their own special databases within contractors companies which would encourage the contractors to integrate with raw material supplier to make timely arrangements for the clients project, especially if it was a large scale one (Nayyar, 1993). Other types of resources that encourage vertical integration include unique resources and core competences. Unique resources include reputation and branding which are

essential in building new businesses in competitive environments (Reed and Luffman, 1986). Core competences are a vital component in the successful running of a vertical integration strategy because it includes the abilities, skills and expertise which must be deployed through the unique resources to achieve competitive advantage. If a contractor combines unique resources and core competencies, then other competitors will find imitation difficult (Nayyar, 1993).

3. Financial. In many cases, financial reasons push firms to vertically integrate in order to reduce cost pressures especially if the strategy will lead to achieving economies of scale (Reed and Luffman, 1986). For example, is very common for contractors in China to vertically integrate to create logistics firms, i.e. transportation, because it will be easier for them to control the movement of materials from one site to another with lower costs (Hill and Hoskisson, 1987). This is especially true if the vertical integration will benefit the whole supply chain. Owning their transportation firm would result in lower labour, transportation and movement of raw material costs. Vertical integration is a long term strategy that limits the financial pressures a firm gets exposed to (Tallman and Li, 1996).
4. Quality. The issue of decreasing quality has been a major concern in the construction sector. The ability to control inputs into the process can be a source of competitive advantage because it can decrease defect rates (Davis and Pitts, 2004). Quality is also concerned with the ability of the materials required to always be available on time to complete the tasks. Vertical integration allows the firm to increase its quality perspectives as it gains control over inputs, movement of materials and availability of resources. A

research conducted by Singh and his co authors (2004) indicate that 74% of quality related problems are resolved after following a vertical integration strategy.

Literature indicates that vertical integration choices among organisations are not the same (Keats, 1990). Firms can differ greatly as they develop into the growth or mature phases, and so does vertical integration. Vertical integration possesses strengths and opportunities for firms and there are several routes to achieve that. Depending on the organisations strategic requirements, the construction industry's characteristics, and the firms internal features (Keats, 1990), some forms of integration might be better suited than others.

2.5.1 Vertical Integration Benefits

Vertical integration must be reflected on two different aspects; internal benefits (and losses) and impact on competitive position (Tallman and Li, 1996). Internal benefits are concerned with the financially rewarding effects of the strategy and the effects of the competitive position enables enterprises to be more receptive to market changes and less susceptible to competitor's manipulation. In many cases, organisations knowingly engage themselves in a costly level of integration than what is needed to increase performance. The main advantages of integration incorporate:

- Enhanced marketing efforts (Keats, 1990)
- Improved technological intelligence (Reed and Luffman, 1986)
- Increased control of the environment (Palepu, 1985)
- Superior product or service differentiation opportunities (Palepu, 1985)

Theory on vertical integration within the construction field suggests that following a highly or broadly integrates strategy is more costly (Ren and Khang, 2004; Luo and Gale, 2000; Wang, 2001). The technologies and equipment required in some facilities needs high capital investment and huge capacities of throughput to be efficient (Wang, 2001). Nevertheless, corporations must be cautious that vertical integration does not limit their flexibility as exit costs can be high (Chen, 1998).

2.5.2 Vertical Integration Strategies

There are several vertical integration strategies for firms to follow. However, some can prove to be difficult to administer because the firm will be required to assume the responsibility for both the upwards and downwards services that could have been otherwise purchased elsewhere (Oliver, 1997). Luo (2001) insists that unless it is vitally strategically required for a firm to fully integrate, it should consider shifting

part of the uncertainty of vertical integration to third parties. Organisations may choose to fully integrate to attain long-term goals concerning strengthening market share and sustaining technological leadership (Oliver, 1997). According to Chen (1998), firms alter their vertical integration strategies every time they decide to do any of the following:

1. Increase or decrease the level of acquisition or divestiture
2. Increase capacity or sales volume
3. Changes in industry demands
4. Changes in ownership

There are four types of vertical integration strategies each being suitable for different conditions. Each strategy represents a different level of internal investment and capability transfer (Balakrishnan and Fox, 1993). Also, each strategy is unique in its risk level, long term gains, desire for control, growth objectives and (Oliver, 1997). The strategies include full integration, tapered integration, quasi integration and contracts (Chen, 1998). Each strategy is explained below.

2.5.2.1 Full Integration

Fully integrated organisations purchase (or sell) their product or service needs internally. They run their facilities to fulfil a substantial portion of their input or output demands internally (Chen, 1998). Full integration in construction is implemented when:

- Organisations are convinced that they can safeguard proprietary operations from competitive infiltration by integrating (Palepu, 1985)
- Components and machinery parts have to be engineered internally to smooth production processes (Grant et al, 1988)

- Business desire for quality control to increase with excellent supervision at all levels and stages of production (Oliver, 1997)
- Integration allows the firm to achieve cost advantages (Chen, 1998)

However, full integration will show best results and works well when:

- Intense price wars are not strong (Palepu, 1985)
- Capacity expansions and increases are smooth with stable demand (Stimpert and Duhaime, 1997)
- The organisation enjoys a leading position and cost advantages due to their ability to obtain scarce resources
- The technology used is extremely advanced and costly for other to imitate (Palepu, 1985)

The more stable a firm is, the more smoothly the integration process will be. It is important to note that full integration does not indicate 100% ownership of diversifiers.

2.5.2.2 Taper Integration

Organisations involved in taper integration depend on part of their requirements to be supplied by outsiders (Hill and Hoskisson, 1987). As Grant and his colleagues (1988) suggest, in taper integration, a firm may produce a certain amount of their requirements internally and the other portions purchased from other parties. The advantage of taper integration is that it allows the firm to take the opportunity of total utilisation of capacity with others to absorb the risks of excess capacity (Stimpert and Duhaime, 1997). However, taper integration allows firms to pay premiums for supplies coming from other parties which as a result also decreased their bargaining power (Porter, 1987). Taper integration can be implemented when no physical connection is needed, and is most suitable when:

- Raw materials are readily available
- Underutilisation of equipment and resources does not incur high undesirable diseconomies. In other words, the benefits still outweigh the costs (Porter, 1987)
- Considerable value can be added by supplies from outsiders which are costly to be produced by the firm internally (Oliver, 1997)

In taper integration, firms have to own 100% of the diversifiers, but can implement partial integration in some of the business lines (Palepu, 1985).

2.5.2.3 Quasi Integration

Organisations involved in quasi integration do not own 100% of their business units but only a portion of the inputs or outputs. The quasi integrated units can be in the form of franchises, joint ventures or mergers and the manner in which they are controlled depends on the management and leadership style (Oliver, 1997). As Nayyar (1993) recommends, this strategy is useful when uncertainties arising from new technologies are extremely high and the capital requirements are too costly for the firm to handle alone. The advantage of quasi integration over taper integration is that it does not require full ownership of diversifiers, but at the same time yield similar economies of scale (Oliver, 1997). However, the costs of managing a quasi integrated strategy is higher as administrative issues are more complicated because of many parties involved in the ownership.

2.5.2.4 Contracting

This strategy does not require any form of internal integration in the firm. However, it requires detailed drafting of all responsibilities to be carried out by others (McDougall and Round, 1984). Because suppliers, representatives, manufacturers, fabricators and wholesalers will be performing the activities that could have been conducted in-house, the firm must have superior knowledge of how the operations should be executed. Contracting is most suited for a dynamic volatile industry such as construction, as suggested by Oliver (1997). He suggests that for contracting to be successful in construction in the long-term, the firms must possess high bargaining power to write the conditions of the contracts.

2.5.3 Factors Affecting Vertical Integration Strategy

As Prahalad and Bettis (1986) imply, there are four forces that impact a firm's vertical strategy:

- Industry development phase
- Industry structure volatility
- Bargaining power
- Objectives of corporate strategy

The first two are concerned with the stability of the firm's environment. The third and fourth factors demonstrate the ability of the firm to follow a vertical integration strategy. For simplicity, this concept is illustrated in appendix 3.

2.5.3.1 Industry Development Phase

As the industry enters another phase, demand conditions change which can affect the degree or form of vertical integration. When the industry shows stable conditions, internal integration can be increased because demand is more predictable and firms are able to plan long term strategies with greater confidence (Stimpert and Duhaime, 1997).

2.5.3.2 Industry Structure Volatility

When the industry is highly volatile, it is difficult and inefficient for the firm to integrate (Oliver, 1997). If the industry structure changes and competitors positions are altered, vertical integration may be too costly to operate, especially in periods of low demand such as the current economic crisis. On the other hand, Palepu (1985) suggests if the industry was less volatile; the vertical integration strategy will be more successful especially if the enterprise enjoys:

- A monopoly position in upward and downward streams
- Ability to raise entry barriers by setting industry standards
- Opportunities to gain cost efficiencies by implementing technologies that ease production process
- Production processes that do not require modification regularly

2.5.3.3 Bargaining Power

The more bargaining power is held by organisations, the more efficient the integration strategy will be (McDougall and Round, 1984). If their bargaining power decreases, this can impact the integration process. As Grant and his colleagues (1988) proposed, bargaining power is owned by the firm if it can:

- Control prices in terms of agreements between suppliers or distributors
- Make suppliers take responsibility of any freight costs or inventory holding
- Dictate policies regarding the marketing arrangements in downward streams
- Ability to acquire superior information about demand conditions, desired quality, and changes in buyers traits from their representatives

Bargaining power is vital in construction as it decreases asset inflexibility (Luo, 2001). This leads other competitor's assets to be exposed to demand fluctuations instead.

2.5.3.4 Objectives of Corporate Strategy

If corporate objectives emphasise control, synergy creation, supplier relationships and client relations, then vertical integration will be a critical component in helping the firm achieve its goals and be an important part of the overall long-term strategy (Grant et al, 1988). Utilisation of assets and resources is an essential corporate view on managing its activities as this will encourage a highly integrated chain (Luo, 2001). Vertical integration and corporate strategy must share a major effect: wealth maximization. It is essential to comprehend that increasing value of the firm through vertical integration efforts is crucial for success (Prahalad and Bettis, 1986).

2.6 Related Diversification Options

There are various routes for related diversification within construction, especially contractors. Whether it is vertical integration or horizontal integration, the options are unlimited depending on the capabilities and needs of the firm. Contractors have the best opportunities of integrating in the construction industry as they are actually conducting the activities and operations of the project (Hopkins and Pitts, 2000). As seen in figure 6, contractors have four main options to integrate in at the same phase of production as its present activities, i.e. horizontal integration. The first is supportive activities such as information technology and procurement. Supportive operations are critical for task completion and ensuring that all phases are running according to schedule. The second horizontal integration option is management activities (Luo, 2001). Examples are project management and claim resolutions. Project management is considered another business line from the contractor's main operations as it requires a different combination of skills and capabilities. However, it is essential to carry it out during the construction activities. If the contractor engages in such a line, it will be another source of income (Lemelin, 1982). Nevertheless, many construction developers are against this idea as it causes most often conflicts of interest. Engineering and consultancy are other alternatives for horizontal strategy. Instead of it being conducted by third parties, the contractor can have its own team of consultants and engineers to overlook the design and approval process of the project. Again, if this type of integration is not controlled carefully by auditors for example, problems may arise later. Also, this opportunity is a main source of many unethical practices in construction (Luo and Gale, 2000). The last choice of horizontal strategy is the integration in complementary businesses. For example, building appliances such as piping's and fix works. This is the best option for many contractors in China,

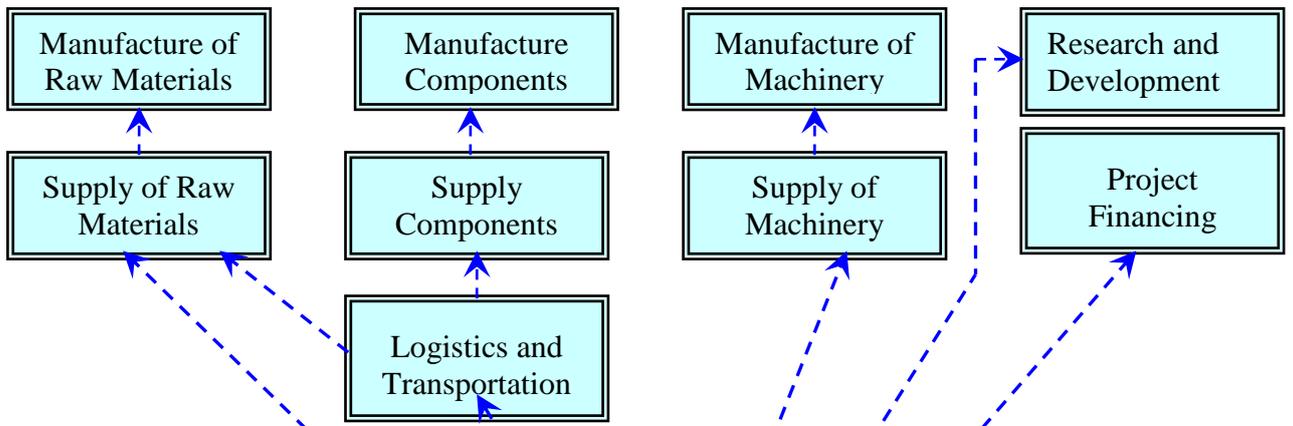
as over 75% of the related diversifiers include fix works businesses (Luo and Gale, 2000).

The backward integration offers more choices for contractors to coordinate their activities. It provides the diversifying organisation the opportunity apply more control over the supplies quality. It also provides a more contingent supply of raw materials (Oliver, 1997). For example, manufacturing or supplying raw materials, such as steel to themselves or other firms is one option. Another includes the manufacture and supply of building components. The third alternative requires the heaviest investment; the manufacture and supply of building machinery, e.g. tractors and cement mixers. Although this backward integration into construction machinery demands substantial amounts of capital, it is also the source of the highest income (Fitzgerald et al, 1991). There are other options such as project financing. This requires the contractor to have tight connections with banks and be able to have high bank guarantees such as large amounts of assets (Fitzgerald et al, 1991). This is not very common as it involves only very large construction firms that are backed up by government projects. Research and Development is also an additional option for backward consolidation. This involves looking into improved building techniques and innovative building materials. Despite the fact that it can require high investments and time before results can be seen, it can also be the main source of competitive advantage to the firm and can guarantee high profits for many years to come (Oliver, 1997). Logistics is a further example of backward integration. This is a very common practice among contractors as it provides flexibility and saves costs in the long term. It involves the movement of all resources needed for construction such as raw material and labour.

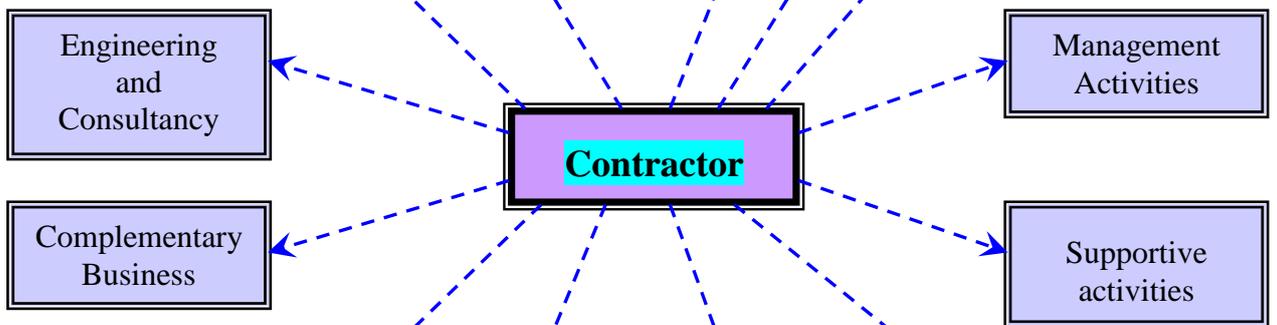
In the opposite direction lies forward integration which allows an organisation to control on how the buildings are managed. Options include maintenance and repair which in many cases are handled by third parties or the construction developer (Chen, 1998). Other alternatives include marketing the building for sale or rental therefore skipping the 'middlemen' who acts as agents and are an extra incurred cost that can be avoided. By having the right combination of personnel, skills and capabilities, contractors should manage to lease out their buildings even before they are completed. Related to marketing and sales is management and operation especially if there is a brand name involved. For example, if the developer is a hotel chain, the contractor can offer to manage the operation of the facility therefore expanding into the hospitality industry. Interior design and home improvement fields are other areas of forward integration the contractors can diversify in.

It is important to note that all kinds of integration will not be successful of the right combination of threshold capabilities, skills and competences are not available (Chen, 1998). It is also equally critical to understand that every integration strategy can turn into a competitive advantage to the firm if it is planned and executed in an efficient way.

**BACKWARD
INTEGRATION**



**HORIZONTAL
INTEGRATION**



**FORWARD
INTEGRATION**

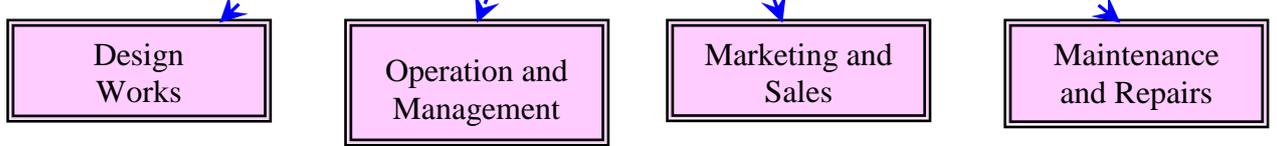


Figure 6: Related Diversification Options for Contractors
 “Hopkins and Pitts, 2000”

2.7 Dimensions of Relatedness

Continuing from the section above on related strategy for contractors, this provides a more general view for the construction sector. The concept or relatedness in

diversification not very clear. What seems a related business line to one firm might not be true for another (Venkatraman and Grant, 1986; Weston, 1970). There are numerous ways a business can be related and fortunately a research conducted by Stimpert and Duhaime (1997) and later supported by Hamilton and Booze (2001) identified 25 dimensions of business relatedness. The more dimensions an organization can bring into its two businesses, the more related they are. The business related dimensions are listed below in table 2. This applies to both businesses; the firm and the diversifier.

<ul style="list-style-type: none">- Offering lowest cost- Manufacture commodity goods- Focus attention on new product development- Hold large market share- Only high value creations produced- Fulfil niche markets only- Share customers- Focus on advertising- Emphasize research and development- Highlight customer service continuously- Hold strong brand reputation- Require identical raw materials- Vertically connected- Share distribution channel- Emphasize on quality- Same sizes- Share management skills- Operate similar IT structure- Similar resource requirements- Same life cycle stage
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Table 2: Dimensions of Relatedness in Diversification
“Stimpert and Duhaime, 1997”

2.8 Types of Relatedness

This is a major issue of particular importance to understanding the diversification-performance linkage. Earlier, it was identified that business can be related or unrelated and in the prior section, the different dimensions of relatedness were discussed. However, Michel and Shaked (1984), identify that relatedness can be broken down into two categories to precisely investigate the type of diversification that affects performance positively. Recall from literature that relatedness refers to the business connections within the same corporate portfolio and in many cases it is considered the source of economies of scale (Luffman and Reed, 1984; Grant et al, 1988). The linkage between type of portfolio composition and firm performance was triggered largely by Palich, Cardinal and Miller's (2000) landmark study. The study, also supported by Rumelt (1974) and Palepu (1985) suggests that not only does related diversification outperform unrelated diversification in terms of financial performance, but that the type of relatedness is critical for increasing performance up to the maximum limit. Grant et al (1988) have suggested that there are two dimensions of business relatedness; operational and strategic. Operational relatedness is referred to business similarities among the operational or process level, whereas strategic relatedness is based on sharing the same intensity of core competencies (Luffman and Reed, 1984). Empirical research has not yet been established on which type of relatedness is more superior and studies show mixed results. Some research indicates that diversification success is based achieving synergy at a faster pace, and that operational relatedness proves this true (Palepu, 1985; Grinyer et al, 1980). Other studies indicate that strategic relatedness achieves economies of scale and save resources therefore it is more effective in increasing performance standards (Teece at al, 1997; Stimpert and Duhaime, 1997). In terms of assessing the type of relatedness,

researchers have mainly depended on qualitative approaches (Luffman and Reed, 1984; Chatterjee and Wernerfelt, 1988; Datta et al, 1991). Managerial interviews and document assessment were major methodologies used to arrive at the elements that construct each type of relatedness. Markides and Williamson (1996) developed six constructs along both operational and strategic dimensions. This conclusion was supported by Palich et al (2000), Stimpert and Duhaime (1997) and Mishina et al (2004) and all have used the construct to conduct their research on diversification and performance. This is discussed next.

2.8.1 Operational Relatedness

This type of relatedness has three dimensions; resource similarity, technological similarity and skill similarity (Markides and Wiliamson, 1996). The resource similarity dimension is concerned with the similarity among the tangible and intangible resources required to complete the activity. This includes both threshold and unique resources. The similarity of threshold resources i.e. those that are needed to meet the minimum limit of clients requirements include tangible resources such as facilities labour and information. If the activity shares the same production facility and the same labour and information then it is a candidate to be operationally related. It is essential to note that Mishina and colleagues (2004) and Stimpert and Duhaime (1997) all propose that all resources have to be similar for the type of relatedness to be considered operational. Although the resources are important, the way in which they are deployed by the firm is even more critical. If they were not combined or shared in a manner to reduce costs or achieve synergy, then the benefits of diversification strategy would not be obtained. Technological similarity refers to the implementation of similar machinery and any technological equipment required for task completion

(Palich et al, 2000). Technological similarity also refers to using the same tools and mechanisms to do different tasks that are part of the production process. For example, for cement production, the same equipment can be used to produce concrete and aggregates. Skill similarity is concerned with deploying the same human skills in carrying out different tasks. For example, project managers are required to show their skills in managing different projects simultaneously by reaching the same goals; client satisfaction with minimum cost at the highest quality. Skill similarity can also encompass communication skills, management skills and any other activity that requires specific experience (Kazanjian and Drazin, 1987).

2.8.2 Strategic Relatedness

Business units are deemed to be alike if for instance, they are of similar size and cost, share similar risk sources, work under similar critical success factors, are under the same industry life cycle and have similar competitive settings (Markides and Wiliamson, 1996). This breaks down the dimensions into three categories; similar intensity of R&D, similar CSFs and similar competitive environments. If business units need similar funding of R&D in terms of costs and knowledge or skill, then they are deemed similar. If the goals or department objectives are alike and depend on similar CSF for completion then they are strategically related as well. Finally, if the businesses units are operating in a similar intense competitive atmosphere that require similar strategic moves to defend themselves of enhance their positions, they too are under the strategically related category (Stimpert and Duhaime, 1997).

2.8.3 Type of Relatedness and Performance

It has been of intense debate as to which type of relatedness increases performance. Researchers that have established related diversification outperforms unrelated diversification find it difficult to establish which type of relatedness seems to be driving the success. However, the initial research into this topic indicates that operational relatedness increases performance levels more than strategic relatedness. Stimpert and Duhaime (1997) have conducted their research to include 300 firms from the construction and auto industry, and the results indicated that operational relatedness was the main force behind higher performance. They have also implied that the technological similarity is the driver for cost reduction and synergy creation which in the short and long term increases performance. Other academics have criticised Stimpert and Duhaime (1997) study saying that these conclusions were drawn on industries that depended on technological sharing for cost minimisation and that the results were invalid (Olive and Sterman, 2001; Meyer and Lieb-Doczy, 2003). Palich and his co writers (2000) have investigated the same matter in their study and the results were contradicting. They have established that strategic relatedness was driving firm performance and that the main cause was sharing the similar R&D costs and knowledge which could be spread across the organisation. Palich et al (2000) have conducted their study to include 370 firms from various industries ranging from healthcare, construction, education and government agencies. Their study has been supported by Mishina and colleagues (2004), who indicate that strategic relatedness signifies that top management do not have to incur unwanted resources in establishing different CSF for each business unit. If the business lines depend on the same CSF to complete their activities in a successful manner, then this will save administrative and resource costs.

2.9 Measures of Diversification

Literature indicates there are several measures of diversification:

1. Business Count Approach
2. Weighted Business Count Method
3. Concentric and Weighted Index of Diversification
4. Rumelt Classification Scheme

1. Business Count Approach: This approach assesses diversification by counting the number of business lines the organisation is engaged in (Bowen and Wiersema, 2005). This method is one of the first used to measure diversification; however, it is not used often in strategic management but is applied more frequently in finance literary texts (Ciscel and Evans, 1984). The business count method, does not consider the importance or the size of diversification to the organisation (Bowen and Wiersema, 2005). This weak point is prevailed by using weighted business counts approach.
2. Weighted Business Count: This method considers the number of businesses the firm is diversified into as well as the importance of each one in relation to how much income it generates, sales and required employees (Gedajlovic et al, 2003). Two popular methods within weighted business counts are the Herfindahl Index and the Entropy Index. The diversification Herfindahl DH index is stated in the following form:

$$DH = 1 - \sum_{i=1}^n P_i * P_i$$

Where n is number of line and P_i is the percentage share within the organization (Caves, 1981). Similarly, in the Entropy Index DT each business portion is calculated $1/P_i$ (Jacquemin and Berry, 1979):

$$DT = \sum_{i=1}^n P_i * (1 / P_i)$$

Both weighted counts analyse the organisational portfolio solely on the grounds of the number of businesses it owns (Jacquemin and Berry, 1979; Gedajlovic et al, 2003). However, these measures fail to relate the businesses to the strategy (Keats, 1990).

3. Concentric and Weighted Index of Diversification: This approach is developed by Caves (1981) initially for a research purpose. Just like the weighted business count approach, the concentric method measures the number of businesses it operates in, their share within the portfolio, and their relation to the corporate strategy (Caves, 1981). The functional form of concentric index of diversification DC is:

$$DC = \sum_J P_j * \sum_i P_i * d_{ij}$$

Where P_j is the number of diversifiers and j is the number of businesses (Caves, 1981). It is the weighted part of the index that measures the significance of each business to the firm (Keats, 1990).The diversification weighted index comes in the form:

$$DW = \sum_I P_i * d_{in}$$

As before, P_i is the total employment, i is the total number of businesses and d_{in} is the total weight of all businesses in the firm.

Within the practice of corporate strategy, both measurements have been exercised with sales based weights rather than employment based weights (Lubatkin and Chatterjee, 1994). The concentric index has been widely accepted by researchers such as Montgomery and Hariharan (1991) and Jacquemin and Berry (1979). On the other hand, the weighted index has gained popularity with Gedajlovic and Shapiro (2003), Keats (1990), and Lubatkin and Chatterjee (1994) just to name a few.

4. Rumelt's Classification Scheme: Rumelt's categorisation of diversification was developed to include not only number of businesses and their relation to corporate strategy, but to include the degree of specialisation as well. Rumelt established four prime groups of diversification, which are further segregated into smaller categories (Rumelt, 1974). As claimed by Rumelt (1974) an organisations diversification strategy can be related to one of the classifications below:

- Single Business – An organisation is said to operate in a single business if it obtains more than 95% of its revenues from one business line. Single business organisations are devoted to one distinct business line
- Dominant Business – An organisation acquiring 70 to 95% of its yearly revenues from one core business line
- Dominant Constrained – The 25% or less of the diversified business line is related to the core business
- Dominant Unlinked – The 25% or less of the diversified lines are not related to the core business
- Related Business – An organisation procuring below 70% of its annual earnings from core businesses

- Related Constrained – Related organisations are directly associated with core business
- Related Unlinked – A related organisation with businesses not exactly linked to the root business
- Unrelated Business – An organisation acquiring below 70% of earnings from the core business with unrelated diversification

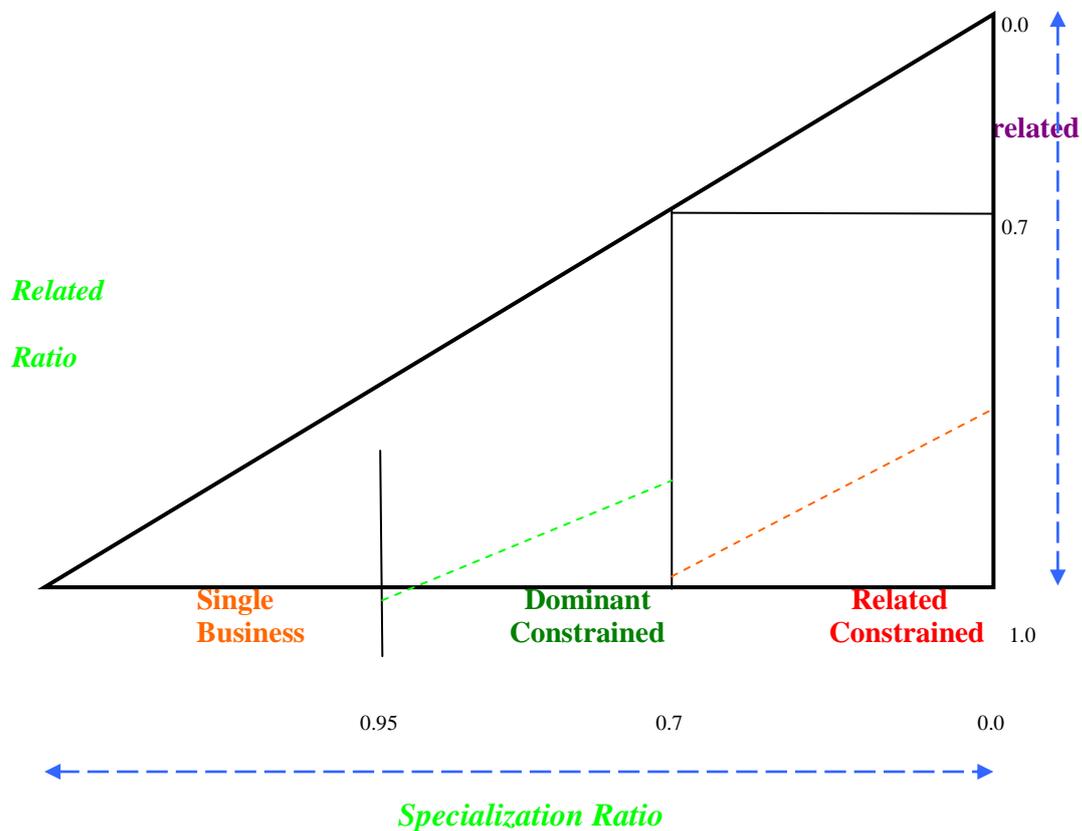


Figure 7: Diversification strategies as Clarified by Rumelt in Relation to Specialization and Relatedness
“Rumelt, 1974”

As shown in figure 7, Rumelt (1974) implies that the specialisation ratio is the key measure of diversification. The single business proportion is one that is strategically depended on the organisation, where is the related constrained and related unlinked are most strategically independent (Keats, 1990; Gedajlovic et al, 2003). The related ratio on the vertical axis in figure 7 is clarified by the proportion of its earnings that is related (constrained or unlinked) to the core business.

2.10 Benefits and Costs of Diversification

As with any business pursuit there are benefits and costs accompanying diversification and eventually, an organisations performance will be contingent on how executives attain a balance between benefits and costs of each instance (Mishina et al, 2004).

The benefits of diversification are built around the following areas:

- 1- Diversification can recover the firm from debt capacity and improve the situation. By diversifying into other profitable businesses, the increased earnings can reduce organisational debt (Palepu, 1985).
- 2- Diversification lessens the possibility of going bankrupt by investing into different or newer industries (Lewellen, 1971).
- 3- Diversification can enhance asset utilization and profitability (Markides, 1995).
- 4- Capital and Labour productivity is increased due to diversification because skills and expertise developed in one business field can be transferred to another (Luffman and Reed, 1984).
- 5- In markets where taxes exist, diversified organisations can enjoy transferring capital from a surplus division to a deficit division unaccompanied by transaction costs (Lewellen, 1971).
- 6- Unsystematic risk is pooled in diversified enterprises (Lewellen, 1971). This is because each venture groups its risk together and reduces its impact on the other businesses.
- 7- Variability in cash flow earnings is minimized (Grinyer et al, 1980).
- 8- Studies show that skilled employees always choose diversified firms because they provide increased job security (Grinyer et al, 1980). Also studies indicate

that employees enjoy staying in diversified organisations because they get a better chance of job rotation and therefore learn more (Lewellen, 1971).

9- Diversification aids firms in realising economies of scope. By vertical integration assets, productivity, equipment and resources can be utilised to a maximum (Michel and Shaked, 1984). Economies of scope also lead to achieving synergy (Chatterjee and Wernerfelt, 1991).

10- Diversification allows a firm to take advantage of the strategic gap that exists in competitive environments (McDougall and Round, 1984).

11- Diversification is also considered a route to escape from an undesirable industry.

There are also costs of diversification. They are as follows:

- 1- Managerial difficulty and complexity in coordinating activities of the businesses (Grant et al, 1988)
- 2- Management does not have the required skill and expertise to manage the other businesses
- 3- The assets of the other acquired firms are in many instances undervalued (Balakrishnan and Fox, 1993). This demands increased effort and excellent management to exploit the opportunities that lie in these undervalued assets
- 4- Very high administrative costs are involved with diversification
- 5- Organisational culture differences can result in problems or HR issues that will require time and effort to solve. (Balakrishnan and Fox, 1993)
- 6- In firms with stock ownership, diversification does not create more value for shareholders (Grant et al, 1988). Shareholders by themselves can own

diversified portfolios and don't need an organisation to conduct this on their behalf

- 7- It is proposed by several authors that the size of an organisation and senior management compensation is extremely related which explains the reason why executives are in favour for diversification (Suzuki, 1980). Diversification often presents rewards to executives that are not available to shareholders, i.e. diversification adds more value to executives than it does to investors. This issue brings about the next point.
- 8- Diversification influences the risk of moral hazard (Palepu, 1985; Suzuki, 1980). Moral hazard can affect directors or top management in that they change their behaviour to act in the benefit of themselves so that they do not lose the bonuses associated with the diversification strategy.

Executives have to balance the cost and benefits of diversification to achieve the goal of increasing organisational performance. There is no doubt that every strategy, especially radical shifts such as diversification has negative impacts on a firm, but managers and all those involved have to work together to keep the damaging effects to the least possible level.

2.11 Diversification in Construction Organizations

Literature identifies construction enterprises as heavy diversifiers after retailing and telecommunications (Luo, 2001). As supported by Chen (1998) and Oliver (1997), diversification strategies, especially vertical integration have become the first choice for construction firms to increase efficiency, reduce costs and gain better control of its supply chain. A research conducted by Luo (2001) clearly shows the areas of most

interest to construction firms when it comes to diversification. A summary table of the research is shown in table 3

No. of Firm	Average no. of Employees	No. of Diversified Business	Major Diversified Lines	Average Annual % of Income from Diversified Businesses
1	300	16	Telecommunications, Food & Beverage, Auto, Banking, Steel, Cement	52%
2	250	9	Banking, Insurance, Telecommunications, Real Estate	15%
3	200	10	Security, Tourism, Logistics, Steel, Petrochemicals	30%
4	130	10	Banking, Insurance, Logistics, Glass, Real Estate	36%
5	125	12	Auto, Banking, Retailing, Oil and Gas, Information Technology	29%
6	125	16	Retailing, Security, Plastics, Petrochemicals	35%
7	200	13	Logistics, Banking, Telecommunications, Tourism, Cement, Agribusinesses	40%

Table3: Number of Diversified Businesses and the Major Lines Including the % of the Annual Income
“Luo, 2001”

As can be concluded from table 3, construction firms have diversified into many different industries, some related and others are not. It can also be noticed that the average percentage of the yearly earnings gained from diversification is in fact high, which means that the diversification strategy is important to each firm. In another study conducted by Chen (1998), as construction firms grow, they prefer to diversify

into unrelated fields in order to increase the power of their portfolio. Just as Luo's (2001) research shows there is no limit to the types of industries construction firms diversify into as they can range from steel to telecommunications. The choice to diversify in construction is not always a corporate choice (Luo, 2001). In many cases, it can come by chance. As one case in China illustrates, a Chinese firm found itself losing control of its suppliers as more important and bigger projects were initiated somewhere else (Chen, 1998). To gain more control and make sure that their projects were not jeopardised because of late supplier deliveries, it decided to vertically integrate and get involved in their own concrete and glass production (Chen, 1998).

In other cases diversification is a corporate choice that is the conclusion of long feasibility studies. To illustrate this point, an example of a UK based construction firm wanted to issue public stocks and make it attractive to investors, it drew a long term strategy to solidify itself in the construction industry. Part of this corporate strategy was to diversify into promising future industries such as pharmaceuticals and agribusinesses (Alkhafaji et al, 1998). In most cases, the choice to diversify strategically comes only after careful organisational analysis that the capabilities required will be available to support diversification such as financial and human resources (Alkhafaji et al, 1998). Oliver (1997) emphasises that conducting quality studies to ensure that the diversified businesses are of the required quality is very vital, to be sure that the new ventures do not affect the reputation of brand image of the firm (Oliver, 1997).

In a seminar paper conducted by Wang (2001), construction firms that engaged themselves in strategic diversification, had shown favours to some industries over others but not necessarily engaged in them. This is illustrated in figure 8. The most common industries were concrete followed by real estate. These are both identified as

forms of related vertical integration. The least favoured form is petrochemicals as it requires intensive capital investments. Food and beverages are not common choices either mainly because they are unrelated to the core business and need special expertise and management to operate the business. Wang (2001) identifies several industries to be attractive to the construction sector because they are related to construction where resources can be shared and activities coordinated. These industries include steel, concrete, banking, real estate and retailing.

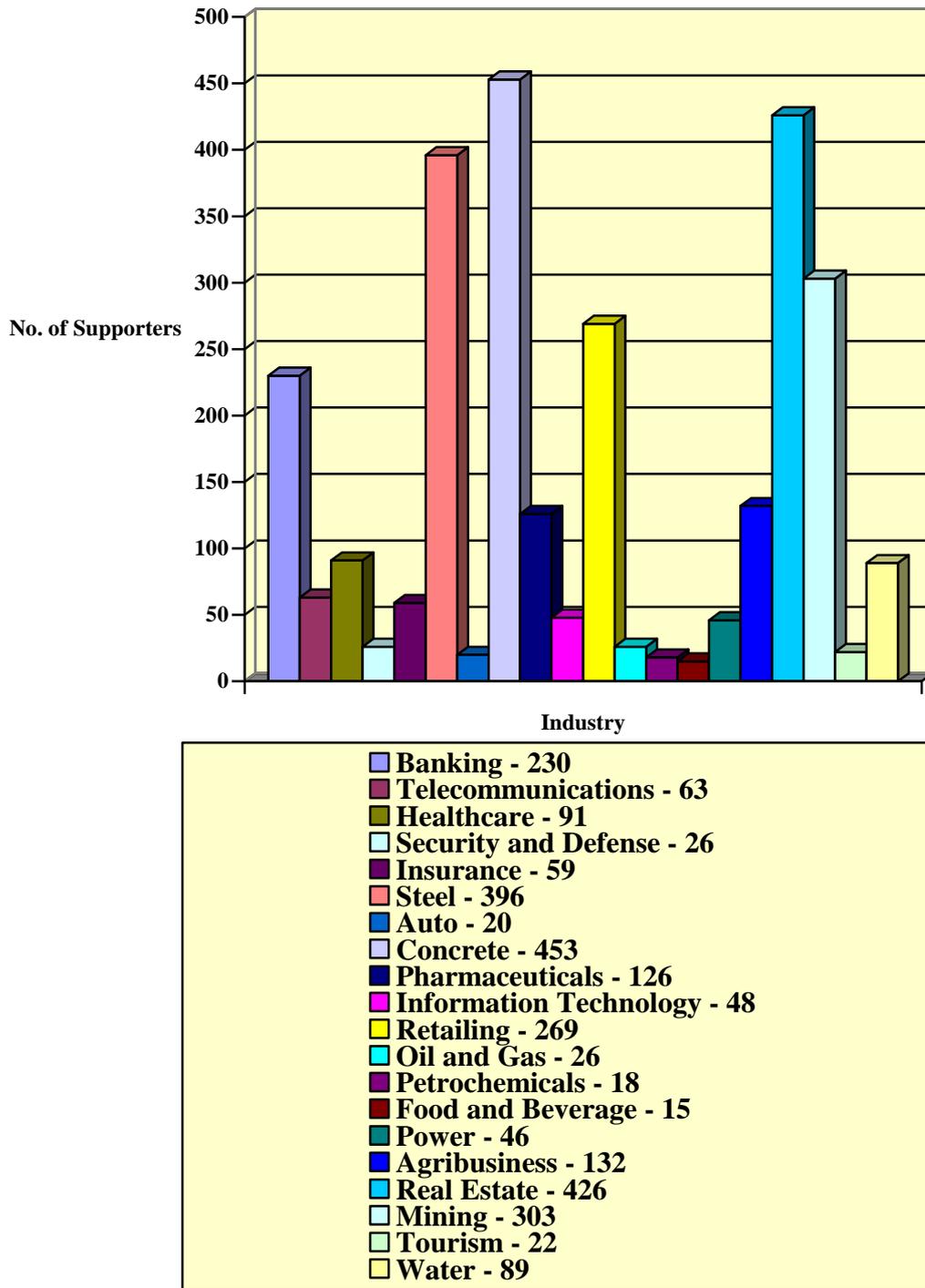


Figure 8: Preferences of Diversifiers in Construction
 “Wang, 2001”

It is obvious that there are some industries being more favourable than others in construction such as banking, steel, concrete and real estate. Wang (2001) indicates

that the reason that firms choose those industries over others is because they are actually being supportive to construction, i.e. they are related. Wang (2001) proposes the reasons for favouring Banking are that construction firms will be able to finance the projects more easily without having to risk increased financial demands. As for Steel and Concrete, they are major raw materials or suppliers to any construction project. Being diversified into this line ensures regular supplies (Wang, 2001). The Real Estate market is a form of forward integration. This is a common favourable industry to engage in for those construction firms specialising in residential, commercial and high rise projects (Wang, 2001). Engaging in Real Estate gives the construction firm more control to market their products or services and eventually speed up the cash flow process (Oliver, 1997).

2.12 Influence of Industry Structure to Pursue Diversification Strategy

Researchers on industrial organisation agree that dissimilarities among construction firm profitability can be made clear by industry size, and that the differences between performance levels can be described by entry barriers and other industrial characteristics (Tongli et al, 2005). A notable assertion of this viewpoint is brought forward by Schmalensee (1985) who evaluated the construction industry and firm respective influences on business performance. By investing cross sectional statistics available by the Federal Trade Commission Line of Business Database of 1975, Schmalensee (1985) came to a decision that the construction industry attributes and configurations have the most influence on firm success and that organisational capabilities and market share a small role.

Schmalensee's (1985) strategic suggestions have indicated that organisational performance is the result of functioning in a profitable industry, Schmalensee (1985)

also proposed that for organizational performance to improve, firms need to diversify into profitable sectors. Wang (2001) also supports the idea that industry selection has an impact on performance. Recent research on the context of industrial organisation to encompasses the notion that the industry profitability characteristic and structure will guide firms to search for strategies intended to reshape their competitive position to make them stronger (John and Harrison, 1999). This perspective indicates that corporate strategies of construction firms can be extremely proactive.

Christensen and Montgomery (1981) concluded that diversification through mergers and acquisitions are aimed at changing the industry structure and to lessen the competitive pressures. It is also believed that firms which operate in markets that limit their activities and profitability are predicted to follow diversification strategies (Seth and Thomas, 1994). This opinion was originated by Rumelt (1974) when he indicated that diversification is a route meant for firms who are locked in declining industries or those whose growth opportunities are limited because of laws, government intervention or low growth rates.

2.13 Methods of Pursuing Diversification

The method of pursuing a diversification strategy vary depending on organisational goals. It has to be incorporated from the initial strategic management process (Hitt et al, 1997). The primary methods of strategic development in construction in the U.K. are mergers followed by acquisitions (Pitts and Hopkins, 1982). Internal development and alliances do not seem to gain popularity as strategic methods as statistics indicate (Pitts and Hopkins, 1982; Gassenheimer and Keep, 1995; Luo, 2001).

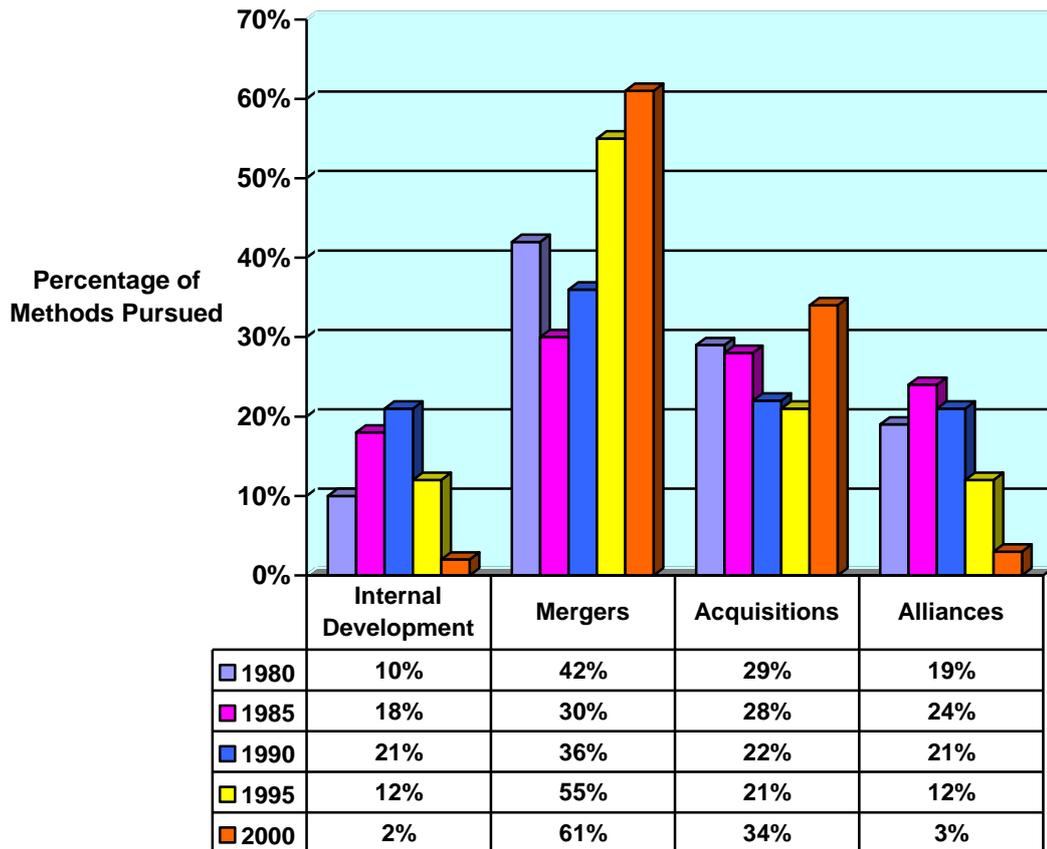


Figure 9: Methods to Pursue Diversification in U.K Construction Firms

“Kale, 2005”

As figure 9 proves mergers and acquisitions are favoured more as strategic methods to implement diversification. As for the construction industry, they are the safest mode for pursuing diversification as they expose least risk (Kale, 2005). It is very common for construction firms to merge together and eventually hold shared decision making among the organisations (Kale, 2005). It is also equally common for acquisitions among construction firms where in most cases one firm would take possession of the other. The worldwide activity in mergers and acquisitions is dominated by Western Europe and Asia, whereas in other economies it is less common (Markides and Williamson, 1996).

There are several incentives for choosing mergers or acquisition. The construction sector is highly unstable in some parts of the world and for entrants this can be difficult without entering through an acquisition (Hitt et al, 1997). Also, in dynamic markets rivalry reaction can be very intense a new entrants (Teece, 1982). In a study conducted by Tallman and Li (1996), construction firms that are willing to diversify overseas to explicit strategic capabilities such as R&D into new building materials depend on acquisitions. As mentioned earlier economies of scale is one reason to diversify. This diversification to achieve cost efficiency is best gained through merging operations (Hitt et al, 1997). In construction, it a long process to build knowledge or obtain new capabilities or skills. Therefore, many architects are motivated to acquire other firms for their R&D skills or mastery in a specific market or process (Venkatraman and Grant, 1986). As said before, managers are always prompted to diversify and it has been concluded by many studies that acquisition is the fastest route to growth and it is definitely favoured over organic development (Venkatraman and Grant, 1986; Hitt et al, 1997; Teece, 1982; Luffman and Reed, 1984). Nevertheless, many construction firms show support for diversification through acquisition because it is a fast route to growth, but not always a successful strategy. The first consequence construction firms get impacted by is poor financial performance (Venkatraman and Grant, 1986). As much as 65% of the acquisitions result in decreased profits for both firms (Venkatraman and Grant, 1986).

Common mistakes in acquisitions:

1. Lack of experience in management
2. Initial exaggeration of payment for the firm
3. Unclear organisational vision / mission
4. Increased chain of command and decision making

5. Underutilised resources because of unclear priorities
6. Poor financial advice
7. Over optimistic expectations
8. Incompatibility of resources and competences between firms
9. Incompatible IT systems
10. Human resource issues because of vagueness in new responsibilities

Despite the mistakes and the negativity of the acquisition strategy, practitioners think an optimal way in construction to diversify is through acquisition (Weston, 1970; Wang, 2001; Low and Jiang, 2003). To make acquisitions successful, Low and Jiang (2003) recommend the acquiring firm to look for a diversifier that will add value to it i.e. not merely acquire a company because of its business line, but because it will add value. Wang (2001) has a different recommendation to aid in successful acquisitions of international firms. Wang (2001) warns acquiring firms to be careful of cultural differences among organisations, especially those that are from another country. Often, cross country acquisitions cause issues of cultural fit which involve differences in routines and the way of working (Weston, 1970). A careful analysis of the cultural routines of the firms should be conducted and where possible, introduce programs to promote the acquisition (Wang, 2001).

Although strategic alliances are not common on a global basis, they are practiced more among Chinese construction firms (Teece, 1982). Alliances are when two or more enterprises share resources, operations and activities to achieve their strategic goal (Markides, 1995). In strategic alliances, goals of the firms do not necessarily have to be similar (Oliver, 1997). Construction alliances can vary in their degree of complexity; they can produce one product or in many cases multiple products (Teece

et al, 1997). By the year 2000, Chinese construction firms had an average 10 alliances each (Teece et al, 1997).

The motives for alliances in construction are:

1. Highly competitive environments increases the complexity of conducting business activities which in return forces firms to share resources or equipment to keep up with the competition without increasing cost or wasting time
2. Many construction projects, especially landmark projects need special skills and innovation and this can be readily obtainable through collaboration (Teece et al, 1997)
3. Finance regulations in some countries exert pressure on foreign construction firms to work jointly with a local firm otherwise they might risk losing the project (Stimpert and Duhaime, 1997)
4. The necessity to achieve critical mass by forming collaborations with firms that offer complementary products (Stimpert and Duhaime, 1997)
5. Learning and sharing knowledge to develop competences from another firm so that in the long term, the learnt competences can be brought in house to the organisation and be used as a competitive advantage (Olivia and Sternman, 2001)

2.14 The Growing Significance of Diversification

Diversification strategy within the construction industry is highly important and no firm can afford to disregard it. Interrelationships among firms has increased during the last decade (Grinyer et al, 1980). There are several reasons for this shift in strategic choice as discussed next:

1. Motivation behind diversification has changed. Since the late 1970s construction organisations emphasise more on related diversification as their need for strategic fit increases (Palepu, 1985). Many small related businesses or unrelated ventures have been disposed of as shown in figure 10. Firms in many parts of the world focus on creating more value for their core business by engaging in related operations or divesting the unrelated business lines (Grant et al, 1988).

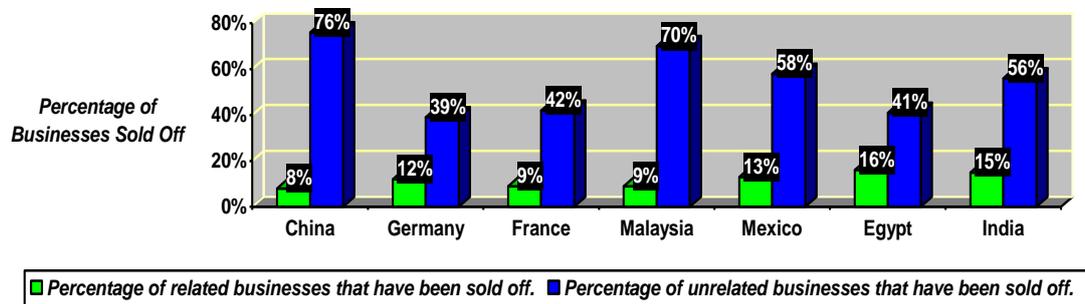


Figure 10: Related / Unrelated Businesses that have been Sold 1970 – 1980
“Palepu, 1985”

2. Organisations have changed the way they view competition. Instead of focusing on expansion as a way to gain competitive advantage, firms are focusing on improving performance (Grant et al, 1988). Construction firms have realised that in order to beat the competition, they have to outperform rivals in terms of performance, because as Chinese Construction firms view it, improved performance will lead to organizational growth (Luo and Gale,

2000). One way to improve performance is to acquire related businesses and exploit interrelationships. As Porter and McGahan (2003) claim, industries are becoming extremely complicated and without coordination among business units it will be difficult to survive.

3. Coordination among firms and industries is more achievable by improved technology (Porter and McGahan, 2003). Technology is converging many construction firms with their suppliers, for instance, procurement processes are more efficient, consumes less time, cost and human resources (Low and Jiang, 2003). Technology is continuously improving production processing and other value enhancing operations. Technology can also increase income by enhancing productivity. Technology is improving communications issues, a major factor in performance. Communication between firms has increased and become more streamlined, therefore cost-effective. Technology has also indirectly assisted in organisational flexibility (Seth and Thomas, 1994).
4. Growth in multipoint competition. The construction industry is a perfect example of multipoint competition where all firms have interrelationships and collaboration agreements together (Porter and McGahan, 2003). In multipoint competition, the firm does not compete on the main business only, but on the related businesses they have acquired as well. This leads firms to view their competitors on a corporate level rather than a business level in order to gain competitive advantage.

2.15 Diversification Motives

According to Pitts and Hopkins (1982), there are many reasons of why firms choose such a radical strategic direction such as diversification. Looking specifically at the construction industry, the main rationale behind following a diversification strategy is value creation (Hoskisson and Hitt, 1990). Within the construction sector, it is beneficial to gain economies of scale both in the short and long term. This will save resources and decrease the chances of duplicating effort. Economics of scale can be obtained by vertical integration into other operations such as forward into building maintenance or backwards into building materials (Wang, 2001). Economics of scale can increase the power of the firm as well. The organisation can have more control over its supplier if it's engaged in their operations either by 100% or partial ownership. Owning a cement production facility can guarantee timely delivery of the building material to the site. Another reason construction firms choose diversification is to achieve efficiency gains (Oliver, 1997). This is achieved by putting any idle resource and competencies into effective use. Many architecture and contractors offer advisory services to other companies when engineers and project managers have no routine or work is less (Bowman and Helfat, 2001). By diversifying into new advisory activities, the organisational scope is extended which results in efficiency gains. In an indirect way, by extending into advisory services, construction firms can attain synergy and therefore the value of the organisation increases. This is because the cooperation of the engineering with consultancy complements each other and their combined value and effect is worth more than each other alone (Luo and Gale, 2000). Another motive to diversify is the need to expand market power by owning multiple businesses (Teece, 1982). With assorted and several ventures, a firm can manage to lift up one business line from the excess earnings of another. This provides a firm a

competitive advantage against other firms, which in the long term may force competitors out of the industry and therefore leave the firm to benefit from this position where profits can be pooled (Teece, 1982). A further reason for firms to pursue diversification is as a reaction to market shrinkage. Construction is a volatile industry; changes in company positions can be very unpredictable. Firms have to look for other sources to make up for any loss in the meantime or future. Diversification as a response to future decline is a form of risk strategy (Tallman and Li, 1996).

As mentioned earlier minimising risk by spreading it across a variety of enterprises is frequently a common explanation for diversification (Lewellen, 1971). However, there is an argument by Palich et al (2000) that minimising risk is only achieved through diversification if it was unrelated. If a business unit in related diversification declines, all other units will be affected as well (Palich et al, 2000). There are less common motives to diversify; nevertheless, they are worth mentioning. The first is exploiting R&D (Grinyer et al, 1980). By diversifying into other businesses such as building material production, a contractor can gain better knowledge of its process and so try to use it in the best possible way (Pitts and Hopkins, 1982). Another cause for diversification is to build on current strengths and capabilities (Jacquemin and Berry, 1979). This is accomplished through investment and continues searching for new methods or remodelling old processes (Markides and Williamson, 1996).

A study performed by Berger and Ofek (1995) studied 200 construction organisations and their rationale for choosing diversification as a strategic direction. The results are illustrated in figure 11. It is worth noting that the organizations were asked to choose any number of motives applicable to them and not just one (Berger and Ofek, 1995).



Figure 11: Different Reasons for Diversification
 “Chatterjee and Wernerfelt, 1991)

2.16 Performance Measurement

Academic literature has criticised the performance measurement systems adopted by construction firms throughout the 1990s since they do not reflect the actual value creation of the firm (Maisel, 1992; Rigby, 2001; Eccles, 1991). This has pushed firms to re-engineer their performance measurement techniques with figures indicating that 30 to 50 percent of contractors and construction management firms have changed their measurement systems between the years 2000 and 2005 (Davis et al, 2004). By 2004, 45 percent of Japanese construction firms have adopted the balanced scorecard developed by Kaplan and Norton (Kale, 2005). Nevertheless, as Davis et al (2004) reported, 8 percent of firms decided not to enforce performance measurement methods as they assume that there exists no positive gain for the management team in addition to the effort required.

As new and innovative methods of measuring performance are required to increase the efficiency and effectiveness of firms, academics, scholars and consultants developed various performance measurement methodologies and frameworks.

The early frameworks employed by organisations mainly involved defining measures that should be used to assess performance levels. Firms such as DuPont and General Electric have implemented financial ratios to determine their performance level (Eccles, 1991). However, the financial measurement techniques have been criticised for encouraging a short term view of the organisation. As Kaplan and Norton (1992) express, the criticisms increased regarding financial ratios for performance which led organisations to search for better non financial measures to reflect factual firm performance levels.

2.16.1 Early Frameworks

Keegan, Eiler and Jones (1989) developed one of the first methodologies which proved popular among many firms; Performance Measurement Matrix (PMM). This straight forward model is so flexible it can aid in measuring any kind of performance (Kaplan et al, 1992). The measures are categorised as cost, non cost, internal and external.

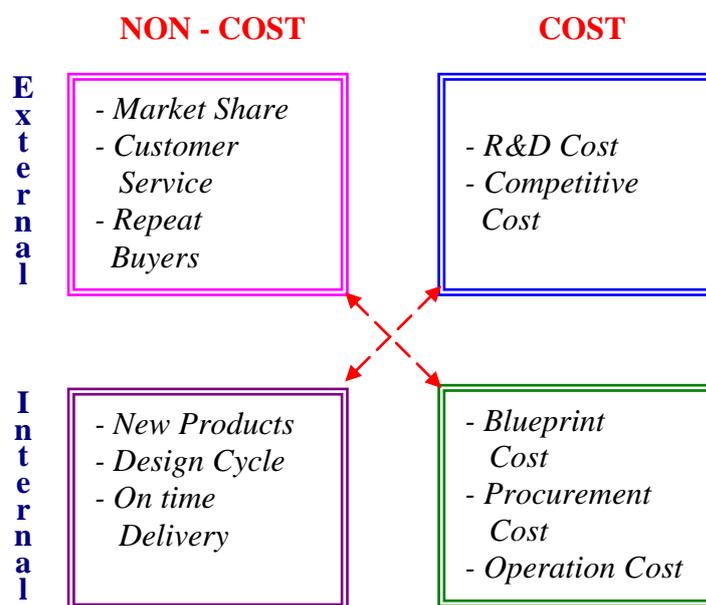


Figure 12 : Performance Measurement Matrix
 “Keegan, Eiler and Jones (1989)”

Wang laboratories developed the SMART Pyramid (Strategic Measurement and Reporting Technique) that also reinforce the need to include external and internal performance measures (Kaplan et al, 1992). Nevertheless, they emphasise the need for all levels within the organisation to be using performance measures. All departmental activities starting from the individual up to the executive corporate vision should have performance measures set against them (Lynch et al, 1991).

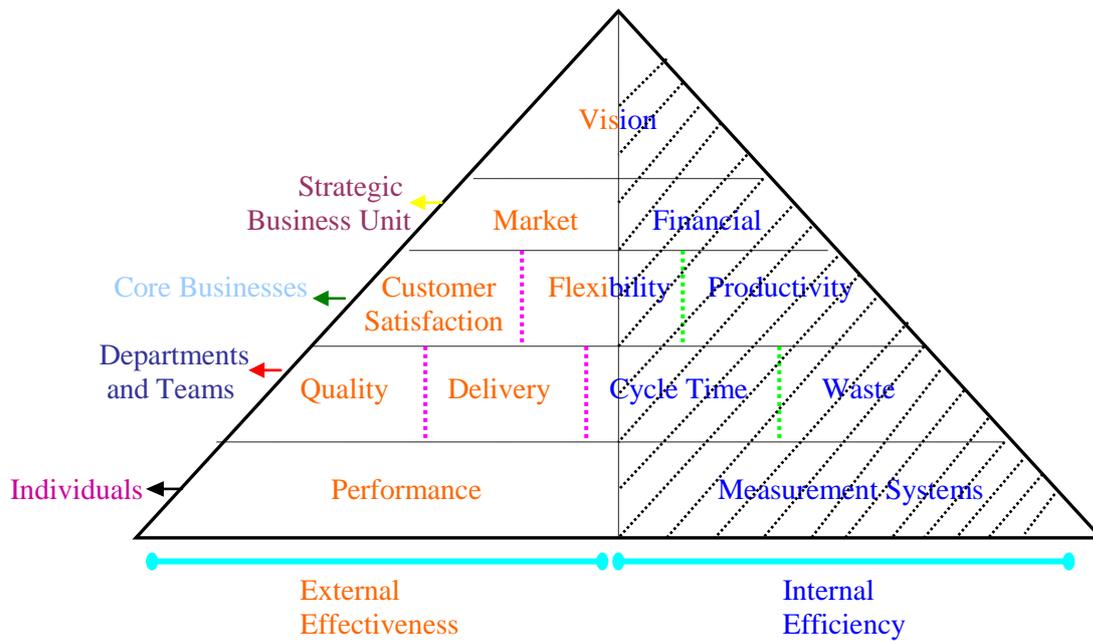


Figure 13: SMART Pyramid
 “Lynch and Cross, 1991”

After intensive analysis of performance measurement in the manufacturing industry, Fitzgerald (1991) has presented a framework which arranges measures into two main fields. The first field is associated with the financial performance and competitiveness results, whereas, the second field is associated with result determinants, known as quality, innovation, flexibility and resource utilisation. A noted strength of this concept is that it emphasizes the importance of cause and effect relationships which many authors built their conclusions on (Meyer et al, 2003). As Fitzgerald et al (1991) presented, the results determinants framework is a turning point in performance measurement literature because it helps recognize the forces of better performance required outcomes.

RESULTS	<i>Financial Performance</i> <i>Competitiveness</i>
DETERMINANTS	<i>Innovation</i> <i>Quality</i> <i>Flexibility</i> <i>Resource Utilization</i>

Table 4: Results Determinants Framework
“Fitzgerald et al, 1991”

However, regardless of numerous performance measurement methodologies that were developed, the most popular framework seems to be the Balanced Scorecard, developed by Kaplan and Norton (1992). As Tongli et al (2005) present, during the last decade, balanced scorecards have become the most common performance indicator tool in 60% of Singaporean Construction firms. Balanced scorecards are more practical because both quantitative and quantitative measures are integrated with more emphasis given to stakeholder requirements (Kaplan et al, 1992). Two perspectives from a performance angle are integrated; the quantitative perspectives composed of financial and internal indicators. The qualitative perspectives composed of customer and innovation and learning (Kaplan et al, 1992). A unique attribute of the balanced scorecard is that it links the performance levels to the strategic choice of the firm (Kaplan et al, 1992).

**QUANTITATIVE PERSPECTIVES
PERSPECTIVE**

QUALITATIVE

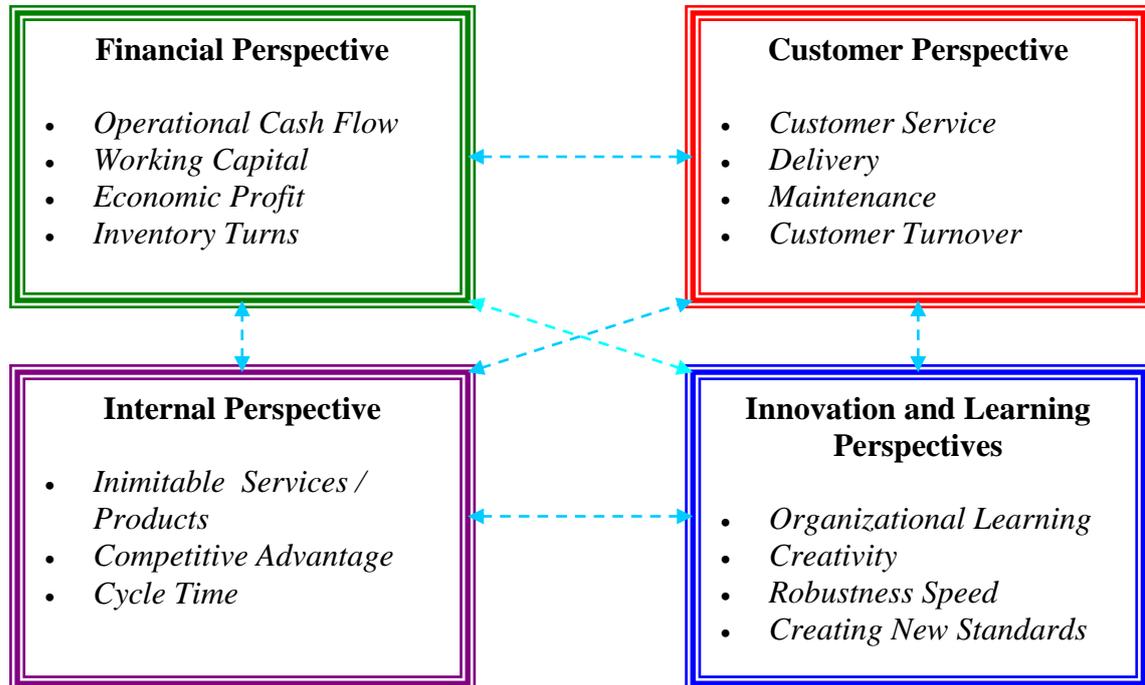


Figure 14: The Balanced Scorecard
“Kaplan and Norton, 1992”

Tongli et al (2005) accentuate that to attain the highest potential of this framework is to combine the measures with the performance drivers. In spite of its global use, critics have diagnosed disadvantages with using the balanced scorecard method. One shortcoming is the lack of a competitiveness perspective (Olivia et al, 2001). The balanced scorecard does not mention the firm’s position relative to competitors. Other authors point out that the balanced scorecard eliminate dimensions regarding employee satisfaction, human resources and environmental and community concerns (Olivia et al, 2001).

2.16.2 Performance Measurement in Construction

Construction Performance is frequently decided by analysing project delivery, i.e. if the project was delivered on budget, time and quality. However, other measurable elements, such as customer satisfaction, employee quality, and value for money and supplier relations are becoming increasingly important for measuring construction performance. Although they can be more difficult to measure, they can still be very beneficial to the organisations performance management program (Eccles, 1991). A common way to measure performance in construction is to compare it with another in the industry.

Performance benchmarking compared projects against similar ones in construction and inspects the projects details e.g. amount of defects, accident occurrence and cost quality (Maisel, 1992). The primary performance measurement method used is benchmarking with a best practice usually set at the beginning. Benchmarking is a very good performance measurement in the UK construction sector and is gaining popularity globally as it aids on bringing the centre of attention to critical issues. There are various approaches to benchmarking in construction, but one that has gained popularity is the use of the construction sector KPI (Key Performance Indicators). The KPI's are used to measure twelve recurrent disciplines, e.g. quality rated on a scale of one to ten and employee safety, reported as number of accidents per 100,000 employees (Singh et al, 2004). Keats (1990) emphasises on keeping the benchmarking method simple and urges firms to keep the data collection simple. Excessive data gathering can shift the focus of taking action to improve performance to comparison without any action (Keats, 1990).

2.17 The Construction Best Practice Programme

In the construction industry and any other industry, organisations executives have to exactly know what their current performance level is, otherwise it will be impossible to set realistic goals for improvement. If a firm is close to those best in class, then it only requires enough improvement to increase performance. If a firm is doing extremely poor, then it should set tough aims for improvement and work towards them in the shortest time possible. This brings to attention the significance of benchmarking performance to the industry leaders. Nevertheless, for benchmarking to be beneficial a firm needs to be certain that they are comparing similar activities. In other words, the firm has to compare its performance to another similar to it in size, projects and strategy.

An initiative named “The Construction Best Practice Program” (CBPP) has attempted to assist in the benchmarking and performance measurement process by issuing construction Key Performance Indicators (KPIs) to enable firms to compare their practices with industry leading standards (Datta et al, 1991). 10 KPIs are published to sum up all construction activities to act as performance indicators (Singh, 1986).

1. Client Service Satisfaction – The level at which the Client was satisfied with the service. It uses a 1-10 scale in which 10 means extremely satisfied and 1 amount to entirely unsatisfied
2. Client Product Satisfaction – The level of Client satisfaction with the end facility. Just as service satisfaction, this uses a 1-10 scale, with 10 perfectly satisfied and 1 not at all satisfied
3. Defects – This refers to the stage of the end product with regards to faults inadequacy and any deformities. Using an 1-10 scale where 10 is equivalent to

perfectly defect-less, 7 equivalent to few defects, 4 equals defects that affect the Client and 1 meaning entirely defective and unsuitable

4. Cost Predictability – This includes two performance indicators, design cost and construction cost. Design cost and construction cost predictability is evaluated against the end cost and any variance is computed as a percentage. As a general rule, any variance above 75% is not good and anything less than 30% is excellent (Datta et al, 1991)
5. Time predictability – This includes two measures; for the design stage and another for the construction stage. Design time and construction time predictability are assessed against actual design time and actual construction time on a monthly basis (Datta et al, 1991). If there are any variations of more than 10% monthly, this could mean that the project will not finish on time. The less variation (less than 10%) each month, the better the situation. To reduce risk, variations should aim to fall between 5 to 7% each month (Palich et al, 2000)
6. Profitability – This is calculated by declaring profit before tax issues and interest rates. This profitability must be presented as a percentage of sales (Michel and Shaked, 1984).
7. Productivity – This is calculated by how much value each employee adds to the firm. This is computed by number of tasks completed by each employee, absenteeism rate, participation in R&D and design phases, planning, and quality control
8. Safety – This is calculated by the number of accidents per 100,000 employees per year. Depending on the type of construction project worked on, the average rate differs. For example, in high rise buildings with 65 + floors,

accident rate is 5% maximum (Grant et al, 1988). Along with the safety factor, there are rules and regulations that the firm has to abide with. For example, in the UAE, for safety measures, workers are not allowed to work on site between the hours 12pm to 3pm during summer months

9. Construction Cost. This compares a project cost in the current year to an almost identical project a year ago. The differences are revealed as percentages. As usual, the lower the percentage variance, the better the position. On average, year to year construction cost should not exceed 5% to 10% yearly variance (Luffman and Reed, 1984)
10. Construction Time – The normal construction time of a project in the present year is contrasted with a similar project last year which was constructed under normal time as well. The time variances are calculated as percentages. Average variances should not go beyond 5 to 8%. Higher time variances indicate inefficiencies and ineffectiveness in the operations of the projects constructed

To implement CBPP, establishing KPIs is an exceptional commencing point. It is essential that each firm sets detailed objectives for the improvement process and coordinates the factors altogether (Bass et al, 1977).

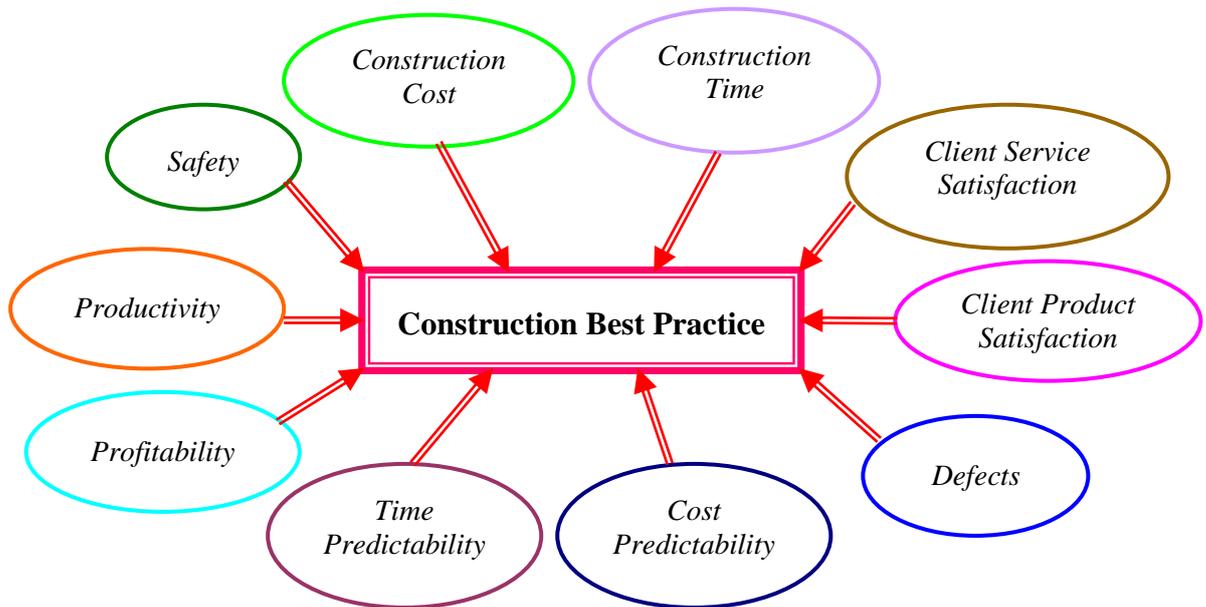


Figure 15: 10 KPI's for Construction Activities Published by the Construction Best Practice Program (CBPP)
 "Berger and Ofek, 1995"

The CBPP enforces six objectives in construction best practice and encourages all organisations involved in construction to work towards them:

1. The building / project upon hand over should convey maximal functionality to satisfy the Client and end users 100 percent
2. End users should be rewarded by making them pay the lowest cost possible
3. Labour and material utilisation should be at the maximum possible level and all inefficiencies should be eliminated
4. Specialist contractors and suppliers should be involved from the initial design phase to insure integration of activities and operations and therefore minimise cost

5. There should be one single point of contact for the complete design and construction of the facility to ensure synchronisation and clear responsibility roles
6. All performance levels at all times with any improvement plans should only be determined by measuring current standards

All six goals listed above, and specifically the last goal request the implementation of a performance measurement system to make certain that the organisations current performance is precise so that an effective improvement plan can be drawn out (Grant et al, 1988).

2.18 Performance Measurement Framework Characteristics

The previous section discussed performance measurement frameworks and identified several prime features that aid a firm to identify a suitable set of processes to evaluate its achievement. The features are as follows:

1. The balanced scorecard and the Performance Measurement Matrix emphasise that measures adopted by a firm have to be balanced in that it measures financial and non-financial areas both internally and externally.
2. The framework should be adequately understood and implemented by key individuals within the organisation. At each departmental level, there should be a key person who's analysing the performance level during a certain time period. For example, construction managers at each level of the project use the balanced scorecard to evaluate their performance against the plan. Later, all key persons involved in this process come together to combine their results and provide a clear picture of the performance level.

3. Each framework discussed emphasises the need for firms to enforce multidimensional performance measures. This indicates the vital need that all parts of performance, with no exceptions, are essential for overall organisational success. However, an agreed set of dimensions has yet to be established in the literature (Kaplan et al, 1992; Fitzgerald, 1991).
4. The SMART Pyramid demonstrates clearly that performance measures must be linked horizontally through the firms operations and vertically through the hierarchy simultaneously while encouraging resource sharing as long as the organisational mission is achieved.
5. In the work of Fitzgerald (1991), the results determinants framework demonstrates the need to focus on the drivers of results in order to control performance and anticipate future performance as well. In other words, the measures used in this framework can be instrumental in future devising (feed forward) and in controlling current performance by feedback.

It is clear from the above review of the methodologies on performance measurement, that the best performance measurement framework has yet to be devised.

2.19 Reasons behind Poor Performance

The construction industry is not the best example for documenting excellent firm performance. A study conducted by Agle and Mitchell (1999) stated that 40% of a total of 650 construction firms declare that their performance level is unacceptable. Also, another research by Burgman and Roos (2004) affirms that many construction firms will continue to suffer from poor performance unless they alter their measurement system and clearly identify what should be measured. There are many reasons behind declining performance in construction ranging from management

mistakes, engineering issues and even forces that are out of control such as natural disasters and economic crisis. However, as this research is on construction strategy only the reasons behind declining performance from a management perspective will be analysed. On few occasions, a low performance does not necessarily reflect a declining organisation; instead it could be because the wrong characteristic is measured (Burgman, 2004). Agle and Mitchell (1999) concluded a list of five common errors in developing measurement systems (for non-financial measurements).

1. The measurements are not linked to the strategy i.e. measuring the wrong thing
2. Not allocating the correct performance objectives and metrics
3. The measurement process is conducted by the wrong person
4. Not measuring performance routinely
5. Do not apply KPI that performance can be measured against

2.20 Financial and Non-Financial Measures

Financial data by itself can not be considered a leading sign of organisational performance. Reported earnings do not reflect a company's growth potential and economic conditions as precisely as combined metrics such as customer satisfaction, quality, innovation, learning and market share (Burgman, 2004).

Increasingly, more construction firms are altering their performance measurement systems to include non-financial metrics to support corporate strategy (Burgman, 2004). Although financial performance is vital in construction, customer satisfaction and quality proved to be more important for the long term survival of the company (Agle et al, 1999). In a study conducted by Burgman and Roos (2004), construction firms favoured other metrics over financial perspectives as reflectors of their

performance. A total of 400 construction firms were included in the study. Some of the perspectives they favoured are innovation, customer satisfaction, quality, supplier relations, market share, setting new standards, reputation, repeat customers and organisational learning (Burgman et al, 2004).

2.20.1 Financial Measures

Evaluating business performance using financial metrics has always generated dissatisfaction among firms. Traditional accounting systems have faced criticism from many practitioners who stated that accrual based performance measures can actually be harmful for firms especially if many decisions taken are based on them (Agle, 1999). More alarmingly the numbers generated by these systems don't reinforce the investments required in innovative technologies and new areas that are critical for booming performance (Dubofsky, 1987). Many CEOs agree that financial measures are only better at understanding the consequences of the past but not act as gauge for futures performance. Many directors witnessed their firm's financial decline as a result of not being aware of decreases in supplier relations or customer satisfaction (Dubofsky, 1987).

2.20.2 Non-Financial Measures

As competition becomes more intense, so does the need to improve performance. As a result, quality assurance programs and awards have become of paramount importance in the past decade with companies devising their own standards to measure their performance. In addition to that, firms are exerting increased pressure on their suppliers to provide excellent quality. A further step in this route is for companies to come up with standards for customer satisfaction.

The performance measurement was radically changed by adding quality related measures during the 1990s and was revolutionised more in the 2000s as competitive benchmarking stepped in (Burgman, 2004). Benchmarking provided managers with a procedure which they can relate to any metric (financial or non-financial). Also, benchmarking transformed the perspectives of managers. Benchmarking concerns recognising competitors that typifies best practice within the construction field. Benchmarking can be applied very easily because the firms that symbolise the best applications are well known. Benchmarking involves the comparison of one's individual performance to the best practicing firm. This is done by comparing activities, processes and functions.

2.20.3 Improving Performance Measurement

Simplified performance measurement frameworks can be adopted by smaller firms and more complex frameworks will be required for larger firms because they have more resources and complicated activities. The Balanced Scorecard includes many performance measurement aspects which when implemented can reveal a true performance level. This makes a solid base to form strategic decisions. The necessity of such a process framework for forming and implementing strategy are not only critical for developing deliberate strategies, such as., business strategies, but also they can aid firms to be more proactive rather than react changes in the market when it will be too late to overturn failure (Clark et al, 2001). The strategic management process within construction firms needs improvement in order to function more efficiently and effectively. The following recommendations have been proposed by Price (2003) and Junnonen (1998) to cater for a better strategy process.

1. Large construction firms always prefer to establish long term strategies (Burgman, 2004). Key experienced personnel are appointed to overlook this process and implement the best practices gained from organisational learning. Nevertheless, organisations should take advantage of organisational learning and be motivated to exchange this knowledge by networking and benchmarking processes (Junnonen, 1998). This will generate new ideas as well. The recent development of strategic management should accommodate change management so that risk is reduced (Price et al, 2003).
2. Conducting internal audits regularly turned out to be an important information source to develop and monitor strategy (Junnonen, 1998). External audits involving market and environment analysis should be shared to aid in increased levels knowledge management among construction firms. Organisations do not necessarily have to use this information the same way. Each can use it to develop a more responsive strategy. Strategic tools and techniques used by construction firms are mainly used for short term planning and fail to take long term perspectives into consideration (Price, 2003). It is advised that tools to measure strategic performance should be created similar to the balanced scorecard. These tools should be integrated within the strategic process to maximise its benefits (Price, 2003).

2.21 Summary

The UAE's construction industry is competitive with many players and not a significant number of projects going on that enable large profit generation. The number of projects undertaken in recent years has been declining, mainly as a result of the world financial crisis and the decrease in construction demand. This decrease in demand has caused the cement prices to drop creating an opportunity for contractors to increase profits only if enough projects are undertaken. This makes the project cost cheaper for contractors. Another opportunity for contractors in the UAE is that the government encourages private development especially of projects that include infrastructure, such as roads and utilities. The local banks also support construction projects by decreasing the requirements needed for obtaining loans. The industry environments analysis shows strong competition among all players in the field. The industry is growing and profit potentials are high making it attractive. Price competition is fierce and currently, the profit gaps are not attractive either. To the newcomers, the industry is unattractive as entry costs are high. To the active contractors, closing their operations and exiting the industry is expensive as well as exit costs are high too. For this reason, firms have to look for alternative operations to generate profits. To sustain their competitive positions, firms are urged to embrace new tools and techniques whenever possible, for example, following alternative strategic directions. New managerial ideas have to be developed and utilised, such as knowledge management and continuous learning. Various strategies can be considered such as differentiation, focus, vertical integration and horizontal coordination just to name a few. These strategies need to be integrated with the strategic direction chosen to gain the most benefits.

The strategic management process is an ongoing activity that requires teamwork, intensive resource planning and supporting technologies. It is essential for the strategic management process to obtain full communication consensus from all those involved. It is important to make sure that all the resources needed to implement the strategic plan will be available on time, in place and at the right quality. The top management should be certain that all the employees understand the aims and goals of the strategic plan and reasons for implementation in order to get everyone's full involvement. The strategic management process is a continuous activity that should target all departments of all businesses in the organisation. The strategy development timeframe and requirements depend on the size of the firm and the amount of resources involved. There is no right way of conducting strategy formulation, but there are essential steps that must be taken such as identifying goals, resource availability, planning, continuous reviewing and quality management. When formulating strategy, there are specific toolkits that are very helpful and must be used as they provide a better picture of the internal and external environment of the firm. These tools include Porter's 5 Forces, SWOT analysis, PESTEL analysis and creating CSF and KPI for use in performance measurement. Most often, the strategic management process results in choosing an alternative strategic direction than what the firm already has in place. It is very common for firms to choose diversification as a form of growth strategy and to increase corporate performance. Diversification comes in two forms; related and unrelated. Related diversification involves sharing technologies, clients, resources, management know-how, skills, employees and transportation methods with two or more activities or businesses. Unrelated diversification, on the other hand, does not involve sharing of resources at all. It involves two businesses that are distinct in all their operations, management systems

and production processes. Literature review has identified related diversification as less costly but more risky to a firm, and the opposite is true for unrelated diversification. Diversifying into new fields, whether related or unrelated involves new knowledge, processes and skills. As with any strategy, there are benefits and costs to diversification. The main benefits derived from diversification are achieving economies of scale, synergy creation and utilisation of production processes and assets. The main costs of diversification are increased management, increased risk and underutilisation of assets. Diversification can come in different forms; however, vertical integration is most commonly used. It involves coordinating activities in the forward supply chain such as in building maintenance or backward supply chain such as in obtaining raw materials. Vertical integration comes in four different forms; full, taper, quasi and contracting. Each involves a different degree of control and ownership. In construction, firms mostly implement full and taper integration. Related diversification can also be further categorised into strategic or operational relatedness. Strategic relatedness indicates sharing the same goals, CSF, R&D across the business units. Operational relatedness suggests sharing on the activity level, such as resources, technology and equipment. Diversification has been measured in a variety of ways as mentioned in the literature review. The business counts approach includes counting the number of business under the same portfolio. This can be measured more deeply by investigating how the business units are linked to the corporate strategy in the weighted business counts method. Rumelt's classification scheme proved to be the most commonly used and most precise in identifying the diversification level. It includes measuring how much income is generated by a specific unit in relation to the organisational portfolio. The industry structure impacts the choice of diversification method. If the industry was unprofitable in that it does

not show demand growth, or have any government support, then it would be unattractive and firms engaged in it would be forced to look for new industries. Entering new industries in the form of diversification can happen in several ways; alliances, mergers, acquisitions and internal growth. It is very common for contractors to diversify by merging with or acquiring other firms as it is less costly, easier to share R&D and includes less risk. The least common approach is internal development as it is risky and needs an increased number of resource allocation for the new businesses. Reasons for diversification are many, but the most significant includes achieving critical mass, increase firm value reduces costs. Performance measurement among firms varies depending on the size, business activities and goals of an organisation. The main performance indicators include financial factors such as annual income and ROA. However, more recently, an increased number of firms are realising the performance is not only measured by the financial status, but by market and productivity measures as well. The balanced scorecard is a common arrangement to measure performance in firms. Many organisations within different industries have benefited from implementing it as it includes different performance perspectives; financial, customer, internal and innovation. It measures the multifaceted factors of performance and practically includes every activity process in an organisation. To conclude, the CBPP was established to measure performance in construction specifically. It includes factors such as client satisfaction, defect rate, construction cost, construction duration, employee productivity, profitability, safety and quality features.

Chapter 3

Diversification and Organisational Performance

3.1 Diversification and Performance

Studies conducted on firm diversification have built several different hypotheses, regarding the impact of diversification on performance. The main debate that has been in the lead of matters concerning corporate strategy is whether organisations that diversify into related business lines excel others that choose to follow unrelated sectors (Hoskisson et al, 1990). The first debate on the topic of diversification was Ansoff (1957), after which five years later, Chandler (1962) proposed two seminar papers which discussed diversification and business policy. Since the study conducted by Rumelt (1974) which looked at the relationship between diversification and performance, many practitioners have tried to explain and refine his findings. Rumelt explored specifically the relationship between diversification strategy and corporate performance along with the role that organisational structure had (Lubatkin et al, 1994).

Ever since, authors focused their research on establishing the impact of diversification on performance. Practitioners such as Markides and Williamson (1996), Michel and Shaked (1984) and Lewellen (1971) confirm that the impact on performance is resulted by the choice of type of diversification. In other words, if an organization extends into related operations then it functions differently from an organization that diversifies into unrelated business lines (Hoskisson et al, 1990). As explained earlier, there is a varied literature on diversification and the way it is defined by different authors (Rumelt, 1982; Palepu, 1985; Dubofsky et al, 1987). Consequently, the

outcomes obtained from the divergent studies are contradictory, unclear and inconclusive. This has hindered authors to reach a broad agreeable conclusion and as a result there is no consensus regarding the essence of this relationship. In other words, the influence of diversification on organizational performance is heterogeneous. Also, Palich et al (2000) state that the results on the connection between diversification and performance are varied because the perspectives and frameworks used differ from one study to another.

Some reviews observe that when firms choose to extent into related businesses, they are able to yield increased returns than if choosing to branch out into unrelated fields (Michel and Shaked, 1984; Teece, 1982; Porter, 1987; Ramanujam and Varadarajan, 1989). Although many agree that related diversification is for sure preferable over unrelated diversification, Prahalad and Bettis (1986), imply that the key to success lies in choosing the right degree and type of relatedness. Christiansen and Montgomery (1981) believe that related diversification does increase performance, but only in the short term. Organizations should include at least one area of unrelated diversification in order to minimize risk (Teece, 1982). As proposed by Teece (1982), the risks involved in related diversification are all linked together i.e. if one line is negatively affected then the whole firm portfolio will be impacted as well as. There should be unrelated business lines to act as buffers in cases of decline in the firm (Berger et al, 1995). Appendix 2 illustrates the percentage of related and unrelated diversification among Chinese construction firms. As exhibited, unrelated diversification has been high for more than 30 years.

3.2 Diversification Performance Relationship

The issue on whether and how diversification affects organisational performance has been extensively investigated in empirical research for over 40 years. Literature indicates that varied theoretical perspectives and methodologies were proposed which is the main reason why the outcomes are often inconsistent. Chatterjee and Wernerfelt (1988, 1991) suggest that the relationship between related diversification and performance is positive. Berger et al (1995) support their view by explaining further that if related diversification is continued over a period of 3 to 5 years, the performance levels would stabilize. In other words, even if the related diversification was discontinued, the performance level would not drop; instead it will stay the same for another 3 years (Markides et al, 1996)

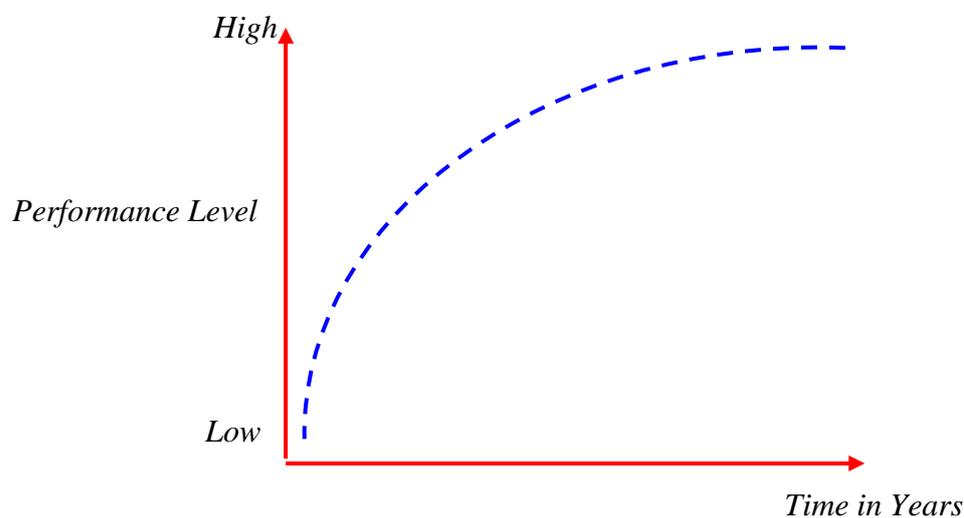


Figure 16: Diversification Performance Relationship in Time (years)
“ Chatterjee and Wernerfelt, 1991”

Calvo and Wellisz (1978) assume that a firm has to be diversified into related businesses for at least 5 years for it to see an improvement in its performance quality. They also urge firms that get engaged in related diversification not to measure performance in financial terms, but instead use market share or customer satisfaction measures (Calvo et al, 1978). The reason for this being financial measures can be misleading at the beginning because a lot of investment will be required which will show up negatively on financial statements.

Palich et al (2000) affirm that related diversification is positively connected with performance as long as the required resources and capabilities are available. Engineers should know how to operate the machinery or systems in the required firm and fully understand ways to merge it with the organisation in order to achieve synergy and develop the learning curve even further (Lewellen, 1971). In addition to that, it is also mentioned that the firm has to continuously develop its organizational knowledge, especially within industries such as manufacturing and construction. Organisational knowledge should be gained by as in accumulating skill and experience through sharing activities and routines across all business lines (Lewellen, 1971). Grinyer and his co-authors (1980) impose that without initiating organisational knowledge, it will be difficult to optimize the benefits obtained from related diversification on organisational performance. As firms expand and become complex, personnel need to share the expertise they have acquired among other departments. Organisations are more likely to realise competitive advantages through activities and production processes. This is only possible through tacit knowledge, i.e. processes can be achieved more efficiently as time goes by because of gaining experience (Chandler, 1962). Another capability needed to enhance the diversification performance relationship is the ability to operate in a value network (Chandler, 1962).

In any construction organisation, it is critically important to create a value network and to come up with an arrangement of inter organisational connections which are important to produce products or services (Dubofsky et al, 1987). All stakeholders in a construction firm such as project managers, contractors and consultants should understand the supply chain within the firms operations and be skilled at managing the whole process and linkages between them in order to ensure that the best value is delivered to the Client (Tallman and Li, 1996).

A third capability required to boost diversification performance linkage is the identification of profit pools and focusing more on them by providing making necessary resources available. Profit pools are those parts of the organisation or acquired business divisions that are more profitable than others (Palepu, 1985). Even in diversification, when acquiring a related business line, it is necessary that the new venture is profitable (Palepu, 1985). Within the confines of the construction industry, some project categories have historically been more profitable than others such as urban transportation over sports venues. A further area essential to support the affirmative relationship between diversification and performance is benchmarking. It's essential to measure performance against other performance levels to get an idea of the actual corporate position. Benchmarking also helps firms understand their capabilities when compared with other firms as discussed in prior sections (Suzuki, 1980). Nonetheless, Palich et al (2000) highly recommend for construction firms to compare their performance position against the best practice in the industry. The best practicing firm does not necessarily mean a firm with the largest portfolio. Instead the best practice firm can be one with awards such as in quality, environment or even safety. Comparing performance to those of best practicing helps to change the executives mindset in making them accept incremental improvements in competences

and resources which eventually will have a favourable effect on performance (Hirsch and Lev, 1971). An important capability worth mentioning is support activities. All the primary activities in construction such as design, logistics, engineering and project management are linked by support activities. Without support activities, as Hirsch and Lev (1971) noted, the effectiveness and efficiency of the primary activities will suffer. Support activities are of great importance to maximise performance as they assist to reinforce the primary activity. One of the important support activities in construction is procurement, which is responsible for bringing together facilities into the primary activities (Balakrishnan and Fox, 1993). The capabilities required for increasing the benefits of the diversification performance relationship are illustrated in figure 16.

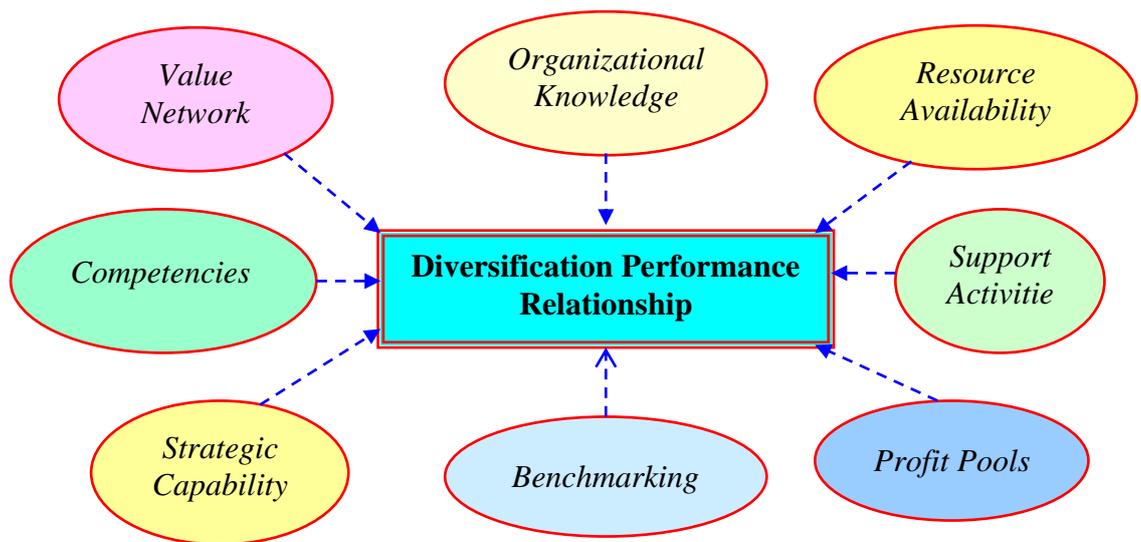


Figure 17: Critical Capabilities Required for Maximising Diversification Performance Relationship
 “Tallman and Li, 1996; Michel and Shaked, 1989”

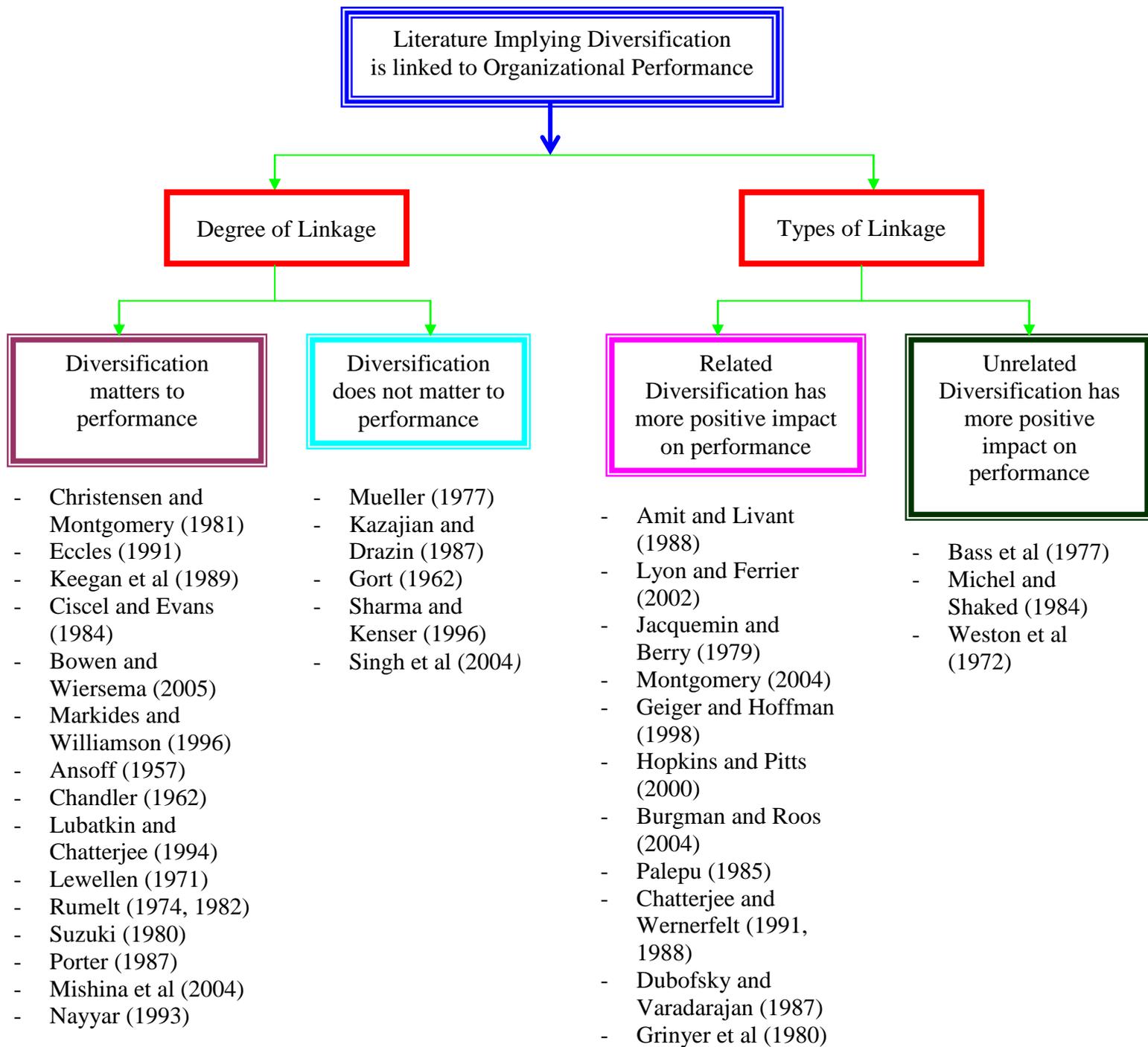


Figure 18: Supporters of Diversification-Performance Research
 “Palich, 2000”

3.3 Diversification and Performance Research

The research on diversification performance connection has been looking at the issues either degree of diversification and performance or type of diversification and performance (Geiger and Hoffman, 1998). Subsequently, this research will cover both the degree and type of diversification implemented that results in optimum performance standards. It's very important to distinguish between the meaning of degree and type of diversification. Degree of diversification is concerned with the number of business lines in the organisations portfolio (Hamilton and Booze, 2001). On the contrary, diversification type refers to the similarity and relatedness between the activities (Hamilton and Booze, 2001). Put differently, extent of diversification is concerned with the diversity per se, without indication of diversity specification. On the other hand, diversification type refers to the connection between businesses (Amit and Livant, 1988). Traditionally researchers on diversification degree are those investigating industrial organization (Marlin et al, 2004; Lyon et al, 2002; John and Harrison, 1999), and researchers studying strategy type are those from the strategic management arena (Lyon et al, 2002; Hopkins and Pitts, 2000). In the publications, diversification degree is measured by using continuous indicators, e.g. weighted business counts while diversification type is evaluated by using grouping measurement schemes e.g. Rumelt's typology (Bass et al, 1977; Rumelt, 1982).

Investigating the connection between the degree of diversification and performance, researchers such as Michel and Shaked (1988), Chang and Choi (1988) and Keats and Hill (1988) propose that expanding the amount of businesses leads to favourable performance results as illustrated in figure 18. On the opposite side, authors such as Lubatkin and Chatterjee (1994) and Dubofsky ad Varadarajan (1987) imply a negative correlation between the extent of diversification and performance as shown

in figure 19. Furthermore, a third party of researchers, namely, Tallman and Li (1996), Nayyar (1992) and Meyer and Lieb-Doczy (2003) argue that a quadratic relationship exists between diversification and performance as exhibited in figure 20. The quadratic features of this relationship is identical to a curvilinear nature, meaning that diversification is positively correlated to performance up to a certain point in which after that any more diversification will decrease the organisational performance (Tallman and Li, 1996).

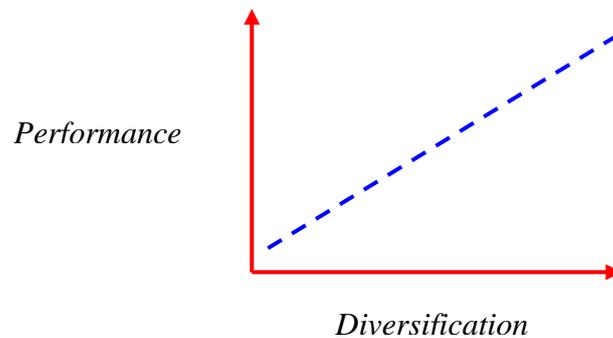


Figure 19: Illustration to show Positive Diversification Performance Relationship
“Chang and Choi, 1988”

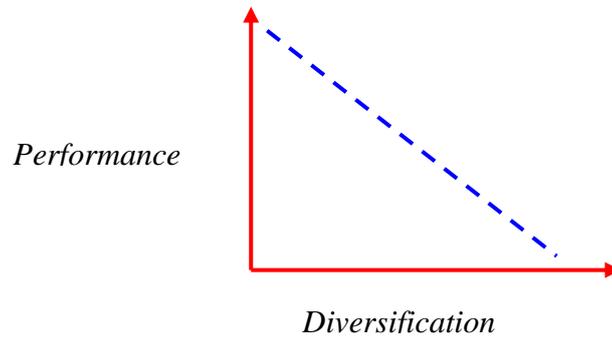


Figure 20: Illustration to show Negative Diversification Performance Relationship
 “Chang and Choi, 1988”

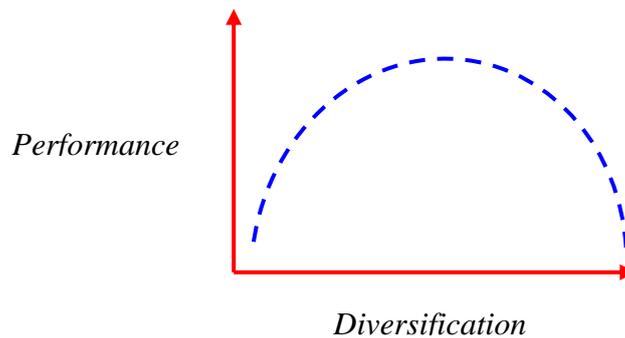


Figure 21: Illustration to show Curvilinear Diversification Performance Relationship
 “Chang and Choi, 1988”

As can be seen, there are three different arguments for the diversification performance relationship and for this reason, a conclusive decision has yet to be reached. Writers such as Rumelt (1974, 1982), Palepu (1985) and Kazanjian and Drazin (1987), put forward that related diversification outstands unrelated diversification. On the opposing side, studies by authors such as Michel and Shaked (1984) argue

verification in approval of unrelated diversification. Surprisingly, the research arguing in favor of unrelated diversification have all been produced between the years 1974 and 1986. This does not suggest that the research composed at that time was misleading, but it may imply that during these years there were more benefits associated with unrelated diversification such as increased market control which were supported by the industry environment as well (Mishina et al, 2004). Nonetheless, generally the research presenting proof on the linkage between diversification type and organizational performance indicate that the predominant studies report favour for related diversification as it affects corporate performance positively.

Ultimately a high number of diversification performance studies indicate that the essence of the diversification performance connection is influenced by contingency elements that are related to both the industry characteristics and structure (Grinyer et al, 1980; Luffman and Reed, 1984) or to organisational characteristics and structure (Varadarajan, 1986; Prahalad and Bettis, 1986). These contingency factors are summarized in table 5.

Industry Characteristics and Structure	Organizational Characteristics and Structure
<ul style="list-style-type: none"> - Intense rivalry and difficulty in gaining competitive advantage. (Hirsch and Lev, 1971). - Government Intervention in controlling firm size and power over the market. (Christensen and Montgomery, 1981). - Slow economic growth for the 	<ul style="list-style-type: none"> - Availability of core competence (McDougall and Round, 1981). - Experience and skill of firm processes and employees (Weston, 1970). - Ability for the organisation to create dynamic capabilities to meet the demands of the ever changing environment (Varadarajan, 1986).

<p>industry can force firm to look beyond their products / markets. (McDougall and Round, 1984).</p> <ul style="list-style-type: none"> - Green issues in construction are putting limits to their activities to make sure they are environmentally friendly with minimum waste (Suzuki, 1980). - Concentrated buyers in the industry make it unattractive and the firm tends to loose control. (Lou and Gale, 2000). - Competition balance makes an industry difficult to operate it i.e. firms should not be the same size or hold the same power (Lou and Gale, 2000). - Low differentiation between products made in construction makes firms compete on price only. This urges firms to look at other sectors where differentiation abilities are higher and firms can enjoy charging a premium (Lynch and Gross, 1991). - Intense retaliation can force firms to look for other business with less retaliation (Palich et al, 2000). - Convergence between the construction and other industries such as steel continuously change their boundaries and limits. (John and 	<ul style="list-style-type: none"> - Include support activities to increase effectiveness of primary activities (Lou and Gale, 2000). - Encourage Organisational learning (Prahalad and Bettis, 1986). - Pursue organic development by enhancing the firms own capabilities (Prahalad and Bettis, 1986). - Conduct sensitivity analysis to analyse the degree of success of diversification strategy (Palich et al, 2000). - Continuous strategy adjustment (Lynch and Gross, 1991). - Implementation of a matrix structure or multidivisional structure makes managing diversified ventures easier (Tallman and Li, 1996; Kazanjian and Drazin, 1987). - Set measurable and applicable performance targets in the form of KPI (Meyer and Lieb-Doczy, 2003). - Implement Balance Scorecards to assess performance in relation to strategy (Prahalad and Bettis, 1986). - Bring in internal markets into the firm to control internal activities (Marlin et al, 2004). - Minimise number of gatekeepers within the organisation so information can flow freely to where it is needed
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<p>Harrison, 1999).</p> <ul style="list-style-type: none"> - The more complementary products are demanded, the more firms will need to diversify e.g. residential and interior design. (McDougall and round, 1984). - The presence of a strategic gap can increase the chances for improved performance. (Suzuki, 1980). 	<p>most. (Marlin et al, 2004).</p> <ul style="list-style-type: none"> - Conducting a stage-gate-process for each product performance (Amit and Livant, 1988). - Using disruptive innovations which can lead to increased performance unexpectedly (Amit and Livant, 1988).
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Table 5: Industrial and Organisational Contingency Factors
“Lou and Gale, 2000; Gassenheimer and Keep, 1995; Grant and Jammie, 1988”

Grant and Jammie (1988), Gassenheimer and Keep (1995) and Lou and Gale (2000), find that the industry characteristics can affect corporate performance performance. Amit and Livant (1988) specifically identify the profitability factor as being responsible for the impact on diversification and performance. Furthermore, Chatterjee and Wernerfelt (1991) imply that only profitability impacts performance levels and that diversification has no role.

As for the organisational structure, Gassenheimer and Keep (1995) recommend that a matrix based structure for unrelated diversifiers increases performance levels more than the functional form. However, the bureaucracy of the functional matrix results in higher performance standards for related diversifies (Caves, 1981). Related diversification requires careful management integration, centralisation in decision making and cooperation between activities that can be achieved through the functional form (Caves, 1981). There are other studies that indicate that the structural

form of the organisation does not affect performance and that there is no linkage between them (Rumelt, 1974; Grinyer et al, 1980). There is also research that report diversification performance relation is guided by the supply chain strategy (Grinyer et al, 1981) and relationships among suppliers (Wang, 2001). Other research describes that the diversification performance connection is controlled by international strategy (Tallman and Li, 1996).

Finally, looking at the literature on diversification performance relation, it is obvious that most of the analysis was conducted during 1970 to early 1990s was on U.S. based organisations. Only a handful of studies have begun to investigate the diversification performance issue in European, Asian and Middle Eastern countries during the 1990s. Nonetheless, literature scholars admit that the research needs to include several aspects of the performance construct (Rumelt, 1974; Lemelin, 1982; Chen, 1988; Alkhafaji et al, 1998; Ren and Khong, 2004). The reason for that being the majority of empirical evidence on performance of diversified firms is derived from accounting based systems. This is a limitation to the literature conducted so far on the diversification performance linkage.

Overall, the literature review states that mixed verifications exist on how diversification and performance are related. These studies were subjected to limitations, which scholars think can be overcome by balancing the qualitative and quantitative performance analysis (Seth and Thomas, 1994). Appendix 6 illustrates two firms; engaged in related diversification and the other in unrelated diversification. Related diversifiers prove to withstand financial crisis more.

3.4 Diversification – Performance Connection in Construction

Few academics have researched of why firms diversify and the rate they diversify in the construction. An idea proposed by Ansoff (1957) that covers most industries including construction states that organisations become larger within a specific direction, either by product development, market penetration or even totally diversifying into new areas as a result of the opportunities available with each option. Rumelt's (1974) landmark research in investigating the connection between diversification strategy and organizational performance was the first step for all the research that followed. Several studies were later published which looked into the diversification performance relationship in several industries such as Information Technology and Construction. Chen (1998) concluded that in China, the relationship between diversification and performance was positively related. His study indicates that the more a construction firm is vertically integrated into related businesses, the better performance it exerts (Chen, 1998). Chen (1998) also mentioned that unrelated diversification does improve performance but this will only be visible after many years. This view has been long before stated by Rumelt (1974) when he reported that firms following related diversification showed improved performance levels. Many other studies also supported this view (Severn and Laurence, (1974); Lemelin, (1982); Caves, (1981). One view by Luo and Gale (2000) proposes that a restricted number of diversification would produce superior performance and increase firm productivity in terms of producing more in less time. This is supported by a study which Luo and Gale (2000) conducted on 100 Chinese construction firms in which they evaluated firms who had diversified into 2 to 9 business lines. The results showed that firms with 2 to 4 diversified lines yield increased performance in the long term (Luo and Gale, 2000). Luo and Gale (2000), supported by Ren and Khang (2004) indicate that

diversification exceeding a certain period can slow down the firm performance and considerable diversification can show a destructive effect on the organisational performance. However, these two studies do not indicate which type of diversification or what degree that brings benefits to an organisation.

Grinyer and his co-authors (1980) argued that excessive degrees of diversification in construction can be linked to exceptional firm performance but after a specific point, more diversification would guarantee decreasing performance. Reasons for that being, firstly, there are limited resources that would have to be shared across businesses and secondly, in many cases conflict of interest can develop (Grinyer et al, 1980). For example if construction firms diversify into businesses such as sustainable building materials or environmental protection, they would need to go against some of their strategies such as lower cost because sustainable materials or building methods usually cost more than the usual techniques (Grant et al, 1988). Nayyar (1992, 1993) has examined models which demonstrated that construction firms operating in a single business are in fact associated with less risk but are also less profitable and that diversified firms do face more risk but are more profitable too. Lubatkin and Chatterjee (1994) supported Nayyar's point only if the construction industry was operating in a stable business environment. The studies that indicated the notion that a curvilinear relationship exists in almost all firms have been numerous supported (Markides and Williamson, 1996; Palich et al, 2000; Mishina et al, 2004; Oliva and Sterman, 2001).

Although a substantial degree of research has been devoted to this topic, there still doesn't exist a solid conclusion. Some studies support the viewpoint of a curvilinear relationship between related diversification and performance while other research claim that it does not matter what type of diversification it is (Ren and Khong, 2004).

Therefore this indicates that literature has yet to come up with a confirmed clarification of the diversification performance relationship. A sufficient number of literature reviews point to the fact that methodological methods is the reason behind the varying research conclusions (Ramanjam et al, 1989; Chatterjee et al, 1991; Datta et al, 1991; Markides et al, 1996; Tallman et al, 1996; Low et Jiang, 2003). For example, Datta et al (1991) put forward that Rumelt's (1974) conclusions may have been guided by the extortionate earnings of the pharmaceutical corporations he included in his sample who at that point of time were highly involved in related diversification. The position of the firm within the industry can generate totally different results (Seth and Thomas, 1994). For instance, in his study, Wang (2001) used a government owned Construction Company which captures over 20% of the Chinese Market. This in itself would influence the findings. Other researchers such as Chen (1998) and Luo (2001) put forward that the definition of diversification is inconsistent throughout the literature and as a result of that the results are varied. Some literature explains diversification from a strategic view whereas others evaluate it operationally. Finally, the diversification measures employed are not the same in all research. Some academics used weighted business counts while others used Rumelt's classification scheme. The method of data measurement directs the results.

Several authors published research supporting the fact that diversification can be beneficial to a firm only up to a certain extent (Palich et al, 2000; Markides and Williamson, 1996; Mishina et al, 2004; Stimpert and Duhaime, 1997). Researchers conducted studies on over 1000 firms, and over 75% of them proved that too much diversification can be damaging to a firm (Stimpert and Duhaime, 1997). However, it was Palich, Cardinal and Miller (2000) who first qualitatively proved studies that indicated this relationship. They conducted 82 studies on the diversification

performance relationship and 71 of them proved that diversification can be beneficial to a firm only if it did not exceed 50% of the firms businesses (Palich et al, 2000) Palich and his co-authors (2000) used accounting based measures of performance and when plotted, they find an inverted – U relationship as well as shown in figure 20. This figure shows the left slope to the curve is supported by a positive set of data, which indicates a positive relationship between diversification and performance. The right slope to the curve, on the other hand, indicates a negative relationship, that prove that firms with unrelated diversification show poor performance (Palich et al, 2000).

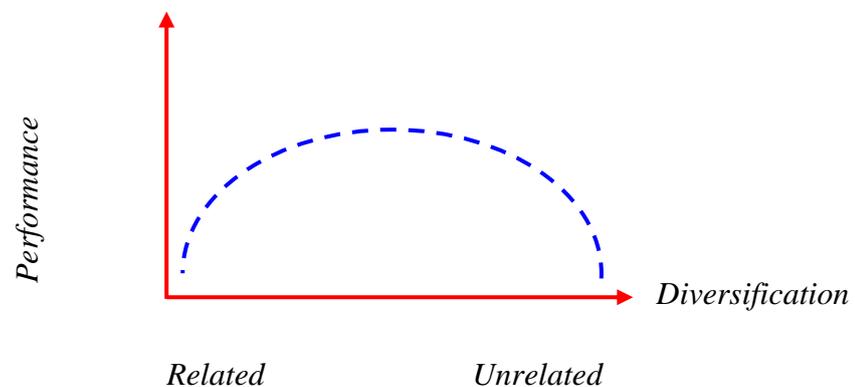


Figure 22: Illustration to show the Inverted U Relationship
“Chang and Choi, 1988”

Arguments in support of the inverted – U relationship suggest that sole businesses in relation to related diversification show the worst performance standards as they suffer from inefficiency and poor utilisation of resources leading to restricted economies of scope (Mishina et al, 2004). Supporters of the inverted – U model suggest that related diversifiers help achieve economies of scale as they improve deployment of underutilised assets (Palich et al, 2000). The inverted – U model helps combine operations on the value chain bringing costs down as well. The inverted – U model

does imply that unrelated diversification is not good for the firm. The following are disadvantages of adopting unrelated diversification:

1. Difficulty in sharing activities and assets. Operations became difficult to share between businesses because they are dissimilar and have no or little connections between them (Misahina et al, 2004)
2. Complications in transferring competencies Different businesses require varied skills and resources, shifting competencies from one unit to another can be highly conflicting (Porter, 1987).
3. Increased management strain on executives. Different businesses require different management skills that can be difficult to learn (Palepu, 1985). Decision making will be increased as well as the chain of command (Porter, 1987). This affects the speed of completing tasks and activities.
4. Decreased Control. Controlling many and different activities can decrease the control management have over businesses (Porter, 1987). The more similar businesses are the more control executives can have over them.

The argument discussed earlier is one perspective on diversification, mainly known as the corporate view (Palich et al, 2000). This requires the top management to look at activities of the businesses and in what areas they are related and how more value can be added by coordinating these activities. However, there are issues with this corporate view; it puts strain on the head office to identify if businesses are related or unrelated (Mishina et al, 2004). It is difficult to categorise which businesses are related and to what extent because relatedness indicates different things to different firms. For example, in the construction industry, interior design could be identified as a related business to some executives as it involves the building. But to others, it can be considered an unrelated business because it does not share the same activities and

competencies required during construction. Nevertheless, the inverted – U relationship proves that medium diversified firms outperform firms that have a concentrated business and those that are highly diversified. The main cause for this being, as Palich and his co-authors (2000) propose, is that top management can find it extremely challenging to control dissimilar portfolio of businesses, therefore affecting the corporate parent role.

To proceed with the inverted – U relationship argument, other researchers view the model from a different view; the business unit perspective instead of the corporate perspective (Low and Jiang, 2003). The business unit perspective reinforces the following proposal: Organisations with highly related businesses, show outstanding performance to those who are engaged in unrelated fields as shown in figure 21.

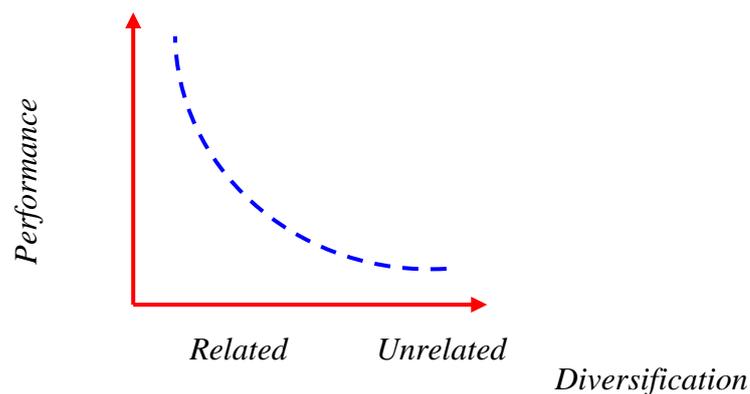


Figure 23: Illustration to show that as Related Diversification Decreases, Performance Decreases
“Wang, 2001”

In other words the more an organisation engages in related businesses, the better performance it will reflect (Wang, 2001). This proposal stated by Wang (2001) questions the validity of the inverted – U model as it suggests that there is no limit to the number of related businesses a firm can acquire without acquiring losses. This claim also supported by Seth and Thomas (1994) and Bowman and Helfat (2001) who indicate that there would be no strain on management issues if the businesses were related and that difficulty in management would only come up because of weaknesses in the system and decision making process. It is proposed that problems would arise only if businesses were unrelated (Bowman and Helfat, 2001). Although this study is supported by research conducted on 250 manufacturing firms, many authors believe that the conclusion reached is not applicable to service industries (Seth and Thomas, 1994; Gassenheimer and Keep, 1995). It is believed that because synergies are easier to achieve in manufacturing industries, it is easier to manage and there can be no limit to the number of related businesses a firm can own as long as it can financially afford it.

3.5 Diversification Performance Measures in Construction Organisations

The construction industry is composed of organisations of different sizes, structures and cultures. Each one being competitive in its own area according to the products or services it offers, capabilities, competencies and long term strategy. Accordingly, every construction firm sets its own performance measures at both a business project and strategic level. The first on the construction performance measures list is benchmarking, which explained earlier, many firms rely on (Markides and Williamson, 1996). Other performance measures employed in construction include:

1. **Critical Success Factors (CSF)** – These are conditions that have to be satisfied prior to achieving any strategic goal (Venkatraman and Grant, 1986). Some CSF can be more complicated as it requires the availability of a specific technology or a threshold capability. For example, CSF can be obtaining government support, stakeholder commitment and guaranteed supplies.
2. **Key Performance Results** – These are the outcomes that have to be achieved in order for the project to be considered successful (Palepu, 1985). Key performance results measure the outcome of the project and basically indicates if the goals of the project have been achieved (Weston, 1970). If the key performance results have not been accomplished, the project is not considered successful.
3. **Lagging Indicators** – This measures the final result of an effort, normally following its completion (Luffman and Reed, 19845). In construction, lagging indicators measures vary depending on type of business (Luffman and Reed, 1984). For high rise buildings, lagging indicators can be between 9 to 12 months, while roads and utility buildings can have lagging indicators of up to 36 months (Venkatraman and Grant, 1986). Lagging indicators are considered

an improvement tool as it helps highlight the problem areas in a business unit so the firm can work on them and try to minimise them in the future. However, there are researchers who state the lagging indicators are useless and have no benefit at all because the details it provides came too late to try and modify or improve things (Tallman and Li, 1996).

4. Leading Indicators – Also known as driving indicators, they are applied more often than lagging indicators (Berger and Ofek, 1995). Leading indicators are used to indicate the progress of a business unit or activity and give an idea of the outcome whether successful or not. Leading indicators is part of a continuous performance measurement system and can be applied as often as an organisation wants (Berger and Ofek, 1995). Leading indicators that are used in the UK construction industry are:

- Decreased number of defects upon handover
- Substantial cuts in whole – life price
- Major developments in functional productivity
- Improved quality atmosphere for end users
- Construction time minimisation
- Enhanced budget and time predictability
- Elimination of waste at the design stage

(Berger and Ofek, 1995)

Tallman and Li (1996) suggest that leading indicators should be coordinated at all levels within the firm to make sure that everyone is working towards the same direction.

3.6 Hypothesis Formation

Reflecting on the arguments discussed in prior sections as a whole, it is concluded that organisations with related diversification outperform those with unrelated diversification. As shown in figure 17 research by many authors support this suggestion. Researchers tried to examine whether the performance is affected the same in related and unrelated diversification. This idea has been extensively analyzed but the results are still unclear. Most literature compiled for this research supports that related diversification has positive impact on corporate performance. Because firms which are involved in related diversification function in multiple businesses, benefits of complementary products or services are easily gained. In related diversification the businesses are connected in many ways allowing to share distribution channels, markets, management capacities, raw materials and brand reputation. (Rumelt, 1974; Teece, 1980).

Contrary to the above, unrelated diversification is weakly linked to the core business, which decreases the chance of achieving synergy (Rumelt, 1974). In addition, corporate governance increases with unrelated diversification causing many management issues. Scholars such as Chatterjee and Wernerfelt (1988) suggest that the only motive for taking an unrelated diversification is to decrease risk by spreading it out especially if an industry was highly unstable. To summarise, related diversification presents more potential for an organisation to utilize and make use of the prevalent businesses to acquire synergies that will be based on resource or skill exchange. Accordingly, organisations with related diversification functions superbly. Therefore the following hypothesis is proposed:

Hypothesis 1: Organisations engaged in related diversification prove higher levels of performance than firms involved in unrelated diversification.

Palich and his co authors (2000) imply that if a single business becomes highly diversified in a related field, then it will incur increased risks. Firstly, if the firm is highly diversified in a related field and demand drops, this can affect the whole profitability of the firm, i.e. the affected diversifier will have a spill over effect (Hirsch and Lev, 1971). Secondly, company growth will depend on growth of the other diversifiers (Christensen and Montgomery, 1981; Varadarajan, 1986). However, on the other hand if a firm has a low level of related diversification it will risk losing the chance to capitalise on synergies. This would definitely reduce profit and market performance (Varadarajan, 1986). Economies of scale will be impossible to capture as well as efficient utilisation of resources.

Therefore, based on this argument, the following hypothesis is presented.

Hypothesis 2: Organizations with moderate levels of related diversification, neither high nor low, show improved performance levels.

Hypothesis 3: Operational relatedness increases performance levels more than strategic relatedness.

This hypothesis will be tested only if hypothesis 1 is proved. This hypothesis is formed on the basis that related diversification is composed of two types each made up of three dimensions. It is assumed that in the construction industry, cost savings

are clearly visible on the operational level, either as a result of sharing equipment, labour or facilities, i.e. sharing resources (Mishina et al, 2004). This hypothesis was proved in a study conducted by Stimpert and Duhaime (1997) specifically in the construction and auto industries. However, there still exist arguments against the validity of this conclusion.

3.7 Summary

The conclusions on the diversification-performance relationship vary. There are studies that indicate a positive connection between related diversification and performance, and others reveal the opposite, positive connections between unrelated diversification and performance. There are studies that propose a negative connection between related and unrelated diversification and performance. Studies reveal linear relationships and others nonlinear, i.e. curvilinear. However, no matter what the studies indicate, no agreed conclusion exists on the relation among diversification and performance. However, a majority of the studies show that a positive curvilinear relationship exists between related diversification and performance. Although inconsistent conclusions exist, there is an agreement that there are specific capabilities required to increase the advantages of related diversification on performance. These include identifying profit pools and focusing on where most income comes from. This provides a clear view of where to concentrate major resources. Another capability is support activities such as marketing services, enable innovation among employees and share information among businesses. The availability of resources is essential for diversification to succeed. Making sure that the required resources will be available before diversifying is very important, otherwise performance will decline. Implementing a performance measurement system such as benchmarking

and conducting it on a continuous basis critical for sustained excellent performance. Identifying the performance measures to be implemented and make sure that all individuals involved understand their objective is vital. Critical Success Factors are important to be set at the beginning so that the requirements of the activities are fulfilled. The other measure is key performance indicator which can act as a checklist to see if the minimum requirements of a business unit or activity have been achieved. Lagging indicators are heavily implemented in construction as it measures the success of a project based on quality. Leading indicators also act as performance measures that look at the quality of a building but on a more regular basis, such as every 4 or 9 months for a maximum of 5 years. This is similar to the maintenance warranty provided by contractors. Leading indicators identify mistakes and defects before they become major problems when solutions become difficult to find. Finally, the hypothesis formed for this research is derived from literature review on the topic of diversification-performance linkage. All three propositions have been previously supported by other studies, but no agreed outcome has been achieved.

CHAPTER 4

METHODOLOGY

4.1 Measurement of Concepts

Diversification is regarded as the independent variable in this research. As it is considered a policy variable, executives have the ability to control the degree of diversification preferred. The corporate performance is considered as the dependent variable. The next clarifies and defines the two concepts.

4.1.1 Diversification

This research will adopt the specialisation ratio (SR) to categorise organisations into three groups of diversification. In the literature of diversification, the SR scheme was one of the widely adopted methods for measuring diversification due to its easy calculation and interpretation of results. The logic behind the SR scheme is to compare the core product market share to the rest of the organisation. Functionally, SR is the ratio of the organisation's yearly earnings from its largest separate business activity to its entire revenues within its portfolio.

	Specialization Ratio in Rumelt's Scheme
Undiversified firms	Specialization Ratio ≥ 0.95 (95%)
Moderately diversified firms	Specialization Ratio $0.95 < SR \leq 0.7$ (70% - 94%)
Highly diversified firms	Specialization Ratio $SR < 0.7$ (1% - 69%)

Table 6: Specialisation Ratio Values
"Rumelt, 1982"

Rumelt (1974) was one of the pioneers to systematically investigate the diversification issue. As specified in his study, three classifications were formed. The first group consisted of undiversified, single product organisations with a SR of ≥ 0.95 . The second category includes moderately diversified enterprises with SR values in the range of $0.7 \leq SR < 0.95$. This group includes both diversified and undiversified firms. The third batch consists of organisations holding a $SR < 0.7$. This class includes corporations with highly linked and highly constrained business activities. Stated in another way, if a SR ratio is equal to or above 95%, then the firm is considered undiversified. If the SR is between 70% to 94%, then it is believed it is moderately diversified. Finally if the ratio is less than 70% then the firm is highly linked and integrated.

4.1.2 Performance Measures

The variable corporate performance is the dependent variable. The end result will depend on the type and extent of diversification being followed. The performance of each organisation will be investigated using subjective information of those executives in charge of the firms researched. Several prior studies have considered financial and market dimensions to evaluate performance (Rumelt, 1974; Marlin et al, 2004; Christensen and Montgomery, 1981). However, there are other studies that have considered multiple dimensions in business such as quality, financial, knowledge management, client satisfaction and employee development as performance measures (Geiger and Hoffman, 1998; Hopkins and Pitts, 2000; Burgman and Roos, 2004). It is argued that firm performance does not depend on excellent financial and market measures only and that there are other factors that can have more impact on performance (Burgman and Roos, 2004). Markides (1995) supports this view by

adding that factors such as supplier relations and safety issues can be as important as financial measures to determine performance levels, especially in the construction sector. Teamwork is also seen as a vital ingredient for successful completion of construction projects and as a result increased productivity and performance (Hitt et al, 1997). In conclusion, there are many elements of qualitative performance measurement that can have the same significance as financial factors. For this reason, this research will incorporate both qualitative and quantitative dimensions of performance measurement. Three measures will be financial based; the fourth will measure quality and finally, employee productivity. The first performance indicator will be operating profits. This includes the profits earned from the businesses main operations (Marlin et al, 2004). The second is annual earnings, which indicate the amount of income before deducting any expenses, investments and taxes where applicable. The third measure is return on assets or ROA. This is an indicator of how financially profitable an organisation is compared to the assets it owns. This will measure management efficiency at utilising the assets to make profits (Burgman and Roos, 2004). The fourth performance indicator is generated revenue per employee. This looks at the ratio of sales in relation to the number of employees in the firm. The final performance measure analyses client's satisfaction level. The more clients are fulfilled with the service or product receives, the better this will be reflected on the corporate performance. In this competitive industry, it is vital that clients are satisfied, otherwise it is very easy to loose them as substitute products are readily available and switching costs are low. Each perspective will be indicated in statements in the survey. The research will use financial information from the five cases to clarify more on the responses gained from the survey questionnaires.

4.2 Survey Development

The information used for the questionnaire of this research was developed after reviewing literature extensively and taking input from industry practitioners who made suggestions regarding the appropriateness of the questions as well as the readability and clarity of the questions.

As indicated in an earlier section, the objectives of this research are:

1. To find out if the impact of related and unrelated diversification was the same on corporate performance.
2. To identify the relationship between diversification and performance.
3. To identify the optimal level of diversification required to maximise firm performance.

Both objectives 1 and 2 have been discussed in prior chapters. The survey questionnaire is developed to investigate objective 3. All hypotheses stated are directional. That is because it implies that an effect will take place, and it also indicates the direction of the effect. The effects are either positive or negative. As a consequence, one tailed tests will be carried out to test the hypothesis validity and prove their effects. In other words, the predicted outcome of the hypotheses is clearly stated.

The questionnaire is composed of 4 parts. The first section is designed to provide general background information of the respondent. This information is useful as to gain understanding of the respondent's background and the experience they have in the construction sector. This is the lead-in part of the questionnaire. The second section of the questionnaire is investigating the type of diversification implemented. It specifically asks respondents to react to statements about the relatedness of the diversifiers to the organization. This section is followed by the extent of

diversification in part 3. The degree of relatedness is investigated by counting the number of diversifiers the company owns and by the percentage of total yearly earnings that are gained from these diversifiers. The fourth section examines the performance of each of these firms. It investigates the performance factor from different angles.

A Lickert scale was developed in the questionnaire ranging from 1 to 5 to represent:

1. Strongly agree
2. Agree
3. Unsure
4. Disagree
5. Strongly disagree

This study will adopt the triangulation method as two research methods will be coordinated; questionnaires and case studies. The questionnaire is developed to reinforce and validate findings from the 5 case studies. This helps to better understand the relationships, if any exist. Case study analysis will be the main approach to empirical work developed in this research. The case studies will employ a range of data collection methods to gain more information on the diversification strategies adopted. Semi structured interviews with 20 individuals from high status positions were conducted as they have better strategic understanding of the corporate direction and its consequences. Both methods, questionnaires and case study analysis were chosen to compliment each other and gain more knowledge into a single narrow topic such as diversification (Schwartz and Kaimen, 2000).

Case studies are considered the ideal methodology in this research as an in-depth examination is required. (Grinyer et al, 1980). Other data collection methods are

known to conceal the details (Michael and Shaked, 1984). Case studies however, usually consider points of view of several participants which bring out the details. Case studies should be extremely selective in the issues to be discussed. For this reason, the issues chosen to be critically investigated are diversification types, degree and direction and their impact on corporate performance.

In this research, case studies will be part of the methodological triangulation approach. This includes using one research method followed by another in order to increase the validity of the results (Luffman and Reed, 1984). There are six main sources of evidence to be used in case studies as identified by Schwarts and Kaimen (2000). The six sources include documentation, interviews, archival records, direct observation, participant observation and finally, physical artefacts. Case studies can use more than one source. However, in this research, two sources will be used; Interviews and documents. As mentioned in numerous studies, interviews can be the most advantageous and most vital source in the case study methods. (Christensen and Montgomery, 1981).

The research methods used in this study are mainly experimental. This has led to choosing an independent design as a method of data collection. Accordingly, along with the 100 questionnaires and 5 case studies, 20 interviews were conducted with different participants holding executive positions in the 5 firm's studies.

A summary of the data collection methods is shown below.

Research method	Case study and Questionnaire
Period	6 months
Documents studied	22 documents
	8 Evaluation reports
	3 Decision supportive reports

	8 project plans
	3 Financial reports
Interviews	20 Interviews
	5 interviews with managing directors
	6 interviews with executive members
	3 interviews with company owners
	4 interviews with business development managers
	2 interviews with strategic analysts

4.3 Sample Population

The overall sample considers 100 respondents from 5 medium sized construction firms within the UAE consisting of main contractors. For fairness reasons all firms were considered for this research had to operate solely in the UAE with no international presence. However, they all consider expanding to other countries in the next 10 years. Also, the firms operate under the same industry structure and environment. They are medium sized as they consist of 220 to 250 employees not including the construction workers. The construction firms considered are all engaged in diversification. Their diversifier's ranged from 124 to 20 other businesses. All 5 firms enjoy presence in developments in the residential and commercial sectors. The projects range from developing compound villas, roads, to high rise buildings. All the firms take on average 3 to 4 new projects per year. The projects costs vary between 80 to 120 million Dirham's each. All the firms considered in this research are privately owned with no government ownership at all. The sample firms examined as

case studies have been established in the UAE between 1970 and 1975, i.e. they all are in operation for an average of 36 years. All firms are engaged in contracting as their main business line, with other diversifiers as well. It is crucial that the sample studies is consistent and are comparable in their activities in order to obtain reliable and valid results. The primary source of the research is the case studies. However, the questionnaire used is a secondary source of data to support information gathered from the case studies.

4.4 Survey Questionnaire

The questionnaire was mailed to each organisation where high rank members were asked to consider it carefully. The questionnaires were sent with a cover letter which explained the objective of the research. Total confidentiality of the respondents and the organisation was guaranteed as this was specifically requested by all firms considered. In addition, it was agreed with each case study firm that results will be exchanged for their vital input and participation.

4.5 Statistical Procedure

The aim of the statistical procedures conducted in this study is to establish quantitative empirical work to prove:

- i. A positive relationship between related diversification and corporate performance
- ii. Highly diversified firms outperform moderately diversified firms

- iii. Operational relatedness has more positive impact on performance than strategic relatedness

There were 5 performance variables in total. In the survey, there were several statements concerning related diversification (RD) and Unrelated Diversification (UD). The variables RD and UD were tested against performance to find out if there are any connections between them.

The first test to be used to explore the prior propositions listed is by correlation. Bivariate correlation was carried to establish the connection between two variables; RD or UD and corporate performance. The Pearson Correlation Coefficient was adopted as the statistical approach to finding the linkage between the variables. The process was conducted by the software SPSS. It would have been difficult to draw conclusions out of the results of the Pearson's Correlation if the coefficient were not squared (Palepu, 1985). The coefficient of Determination is calculated in the form of:

$$Y_{ij} = \beta_0 + \sum_{ij} Y - (\beta_j) + \alpha Y_i$$

(Hoskinsson and Hitt, 1990)

The Y_{ij} is the dependent variable; β_0 and β_j are the unknown coefficients; β_j and αY_i are known as regressors (Hoskinsson and Hitt, 1990). The Coefficient of Determination is also known as R^2 is the square root of the correlation coefficient. The correlation coefficient shows the direction and strength of the linear relationship between the two factors. The correlation coefficient, represented by r has to be calculated before R^2 . Therefore, each correlation coefficient was squared to produce what is known as R^2 . This

measured how much variability is shared between the two. This value was converted into a percentage for ease of understanding. It is vital to note that the R^2 does not indicate the reasons for variation; it just indicates how much variation is shared between the two variables. The Coefficient of Determination or R^2 is helpful as it indicates the variance of one variable on the other. R^2 shows the strength of the relationship between the two factors. The R^2 represents the percentage that is nearest to the line of best fit. R^2 indicates the percent of other elements that affect the independent variable other than the dependent variable (Eccles, 1991). Direct conclusions can not be obtained by calculating the r alone because it does indicate the percentage of the other factors affecting the dependent variable. For example, if the relationship between client satisfaction and related diversification shows a correlation coefficient of 0.422, then R^2 will be $(0.422)^2 = 0.178$, which means that there is 17.8% of client satisfaction shared by related diversification. This indicated that although there is a positive connection between client satisfaction and related diversification, it accounts for only 17.8%. This means that there is a variation of 82.2% composed of other factors that affect client satisfaction other than engaging in related diversification. The other factors can be understood further by analysing the interviews and questionnaires compiles for this research.

The case studies and the interviews conducted was analysed qualitatively. All major points and issues will be presented and a discussion to support their views will be put forward.

4.6 Summary

This research is conducted using a triangulation method coordinating two methods; survey questionnaires and case studies. The independent variable is diversification, and the dependent variable is performance. Diversification will be measured by the Specialisation Ratio (SR) developed by Rumelt (1974). It is the ratio of the largest earning diversifier in relation to the core business and other units. The SR is classified into 3 categories:

- Undiversified or low diversification $SR \geq 0.95$ (95%)
- Moderately diversified $0.95 < SR \leq 0.7$ (70% - 94%)
- Highly diversified $SR < 0.7$ (1% - 69%)

The performance measures adopted in this study are a combination of financial, quality and productivity factors. There are 5 performance variables considered: annual earnings, ROA, operating profits, revenue generated per employee and client satisfaction.

The survey questionnaire was developed after intensive literature review on related diversification and performance measurement. The questionnaire is composed of 4 parts. Part one is general information of the respondent. Part two looks into the type of diversification implemented, related or unrelated. Part three discusses the degree of relatedness. Finally, part four investigates performance of the firms discussed.

Case studies of five contracting firms were used as well. The questionnaire was used to reinforce the findings from the case study. The case studies were conducted over a period of six months and included studying company documents and conducting 20 interviews with high rank executives within their firms. The interviewees ranged from company owners to strategic analysts that were responsible for formulating the long term strategy of the firm. The sample population consisted of 100 respondents

from 5 different contractors all operating in the UAE. All firms have a similar number of employees; 200 to 250. The contractors all carry out similar projects of scope and cost. The statistical procedure used was mainly correlation. Pearson's correlation was used to test hypothesis 1 and Bivariate correlation was used to test hypothesis 3. The R^2 , also known as Coefficient of Determination was calculated to give a better idea of the impact of type of diversification on performance, and provide explanations for the differences in variation.

Chapter 5

Data Analysis

5.1 Introduction

Five firms were selected as case studies for intensive investigation on diversification and its impact on corporate performance. Document study and interviews were used to build the case study. The questions used for the interviews were explained to executives prior the case study development process to give them time to provide the right information and data. The objective of the case studies is to see what role diversification had in each organisation and how it affected performance.

5.2 Corporate Case Study: MSBC

Formed in 1973, MSBC quickly grew from a single unit business to an enterprise owning 12 firms in 5 categories (see figure 24). MSBC started in contracting and quickly diversified within 10 years into related businesses such as building materials and improvement. This was a strategic move to secure more power over raw materials as they are the main cause of construction delays. MSBC followed this strategic direction to support its main business. A few years later, MSBC formed a logistics company to enhance the movement of its raw materials to the site locations and also to save on the transportation costs that was at that time performed by a third party to move the products from building improvement sector to the warehouses or wholesalers. In early 2000, MSBC acquired a chemicals factory used to produce industry products. Witnessing the high profit potential and huge growth in the petrochemicals sector, MSBC formed a chemical testing lab and a consultancy firm in this field. Although the petrochemicals sector is considered to be unrelated to

contracting, it is the highest earning sector within its portfolio. There were very difficult times at the beginning regarding management issues because of lack of experience in this industrial field. However, the structure of MSBC encourages coordination because it is a multidivisional structure. Rotation and learning are essential components of the strategic success of the firm Decision making process is delegated to managers in charge and only strategic issues are to be dealt with the top management. During the worldwide financial crisis, MSBC reveals that the petrochemicals sector within the portfolio kept the company functioning. As the construction sector especially in the UAE was affected badly, the petrochemicals industry was stable. In short, diversifying in petrochemicals was a risk reducing strategy. However, in the long term, MSBC will diversify into related fields as they bring economies of scale and save costs by utilising resources to the maximum limit possible. The main goal of diversifying in similar areas is to achieve synergy where all the business lines in the portfolio will benefit.

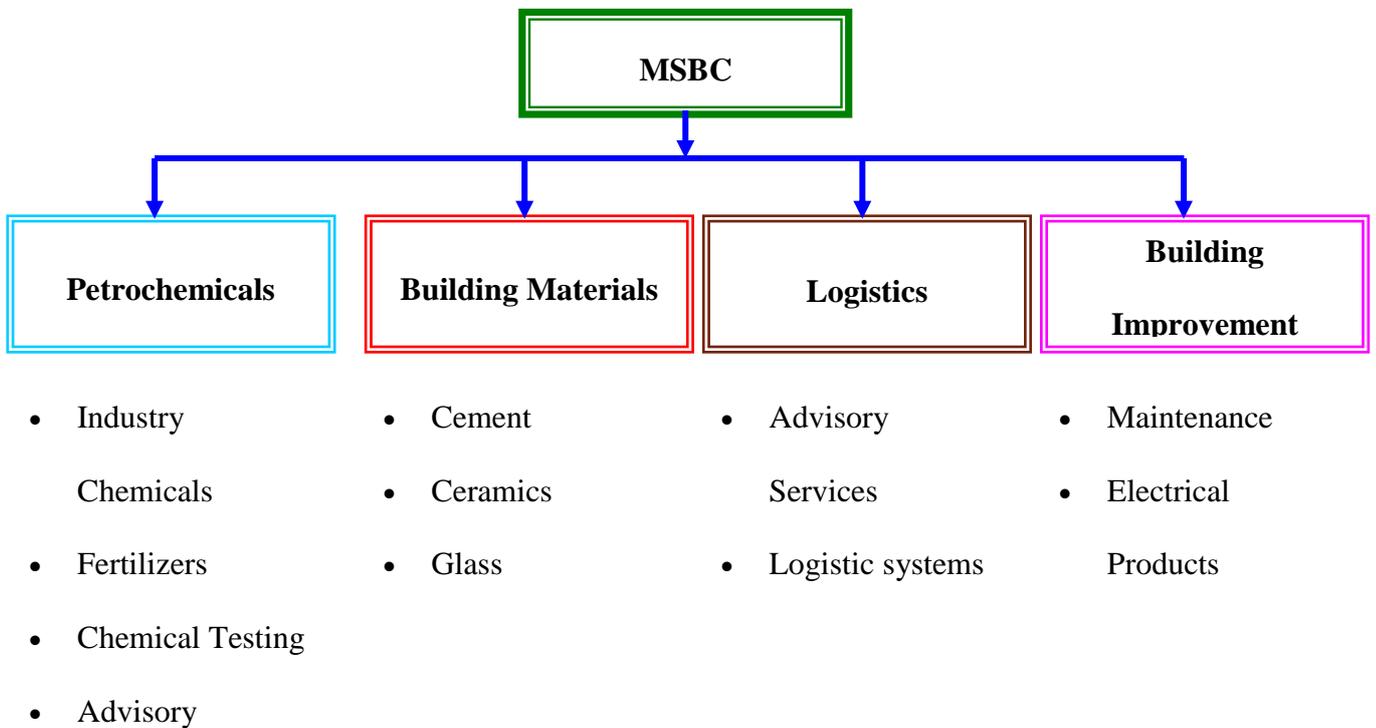


Figure 24: MSBC Diversifiers

The SR of MSBC is 0.63 demonstrating high diversification levels. The highest earning sector is the petrochemicals, whereas the least earning is logistics. This high diversification indicates that yearly earnings in MSBC are shared, and that profits are not dependent on one sector. Even though MSBC admits that its highest earnings are from petrochemicals, when compared to other businesses, the difference is not significant. MSBC current financial performance is declining mainly as a result of the economic crisis. However, MSBC also puts forward that there were strategic decision mistakes that led to this situation:

- Not revising the strategic plan. The top management insisted to implement their strategic plan no matter what the competitive environment indicated. To rectify this mistake, MSBC calls its business analysts and planning team together whenever there is a significant change that can affect the strategy of the firm. Together, the executives and planning team alter the strategy and take the appropriate response to minimise any damage.
- The top management assumed that any time is suitable to execute strategies. This proved fatal as MSBC was implementing current strategies on resources calculated the previous year. To correct this problem, the strategic plan was incorporated with the budgeting process in order to allocate the necessary resources.
- Key activities were not measures. The operations involved with achieving the company's mission were not measured regularly, and in many cases were not even included in the performance appraisal. This led MSBC to continuously measure the wrong activity or process. To amend this error,

MSBC set CSFs that have to be reached before implementing the KPIs set by each department.

- The large expansion resulted in head staff being shifted from one department to another without being able to effectively react to crisis.
- Lack of the knowledge of industries it was diversifying into.
- Overpayment for the acquisitions. MSBC paid for the acquisitions more than their market value which increased debt.

The performance measurement process is conducted once yearly. The performance for each diversifier in the portfolio is separated, i.e. the final performance does not include MSBC and its group of firms. MSBC depends on benchmarking to evaluate its performance. Its benchmark is the industry's best performer. MSBC realizes that it is the unrelated diversifier that drives the firm performance, and suggests that the reason for this being the industry structure and competitive environment is not too strong. The performance measurement process includes analysing different perspectives; financial, quality and client satisfaction. Employee issues are often considered to affect performance especially if issues such as absenteeism became more often. MSBC believes that supply chain efficiency is a primary route to improving organisational performance. For that reason they established their own logistics system in order to skip the process of building supplier relationships. For 9 diversifiers, MSBC preferred taper integration as a form of vertical integration. This was believed to reduce any risk the firm might face in-case demand shifts rapidly without warning. Taper integration was focused on distributing some of the output to other competitors. Taper integration helped MSBC to fully utilise the facilities without having to worry about the excess production. Employees were encouraged to rotate within the diversifiers and use their knowledge to combine activities where

needed to reduce costs. This increased the revenue generated per employee and shortened the chain of command. MSBC made cost savings in the area of leveraging resources. Whenever the resources were not needed, instead of storing them, they were transferred to another unit where better use could be made out of them and returns are highest. Examples often included personnel and innovation. This also helps in reducing resource replication where the intangible resources can be copied from one business unit to the another without increasing its number. Employee knowledge and data sharing is an example.

5.3 Corporate Case Study: WTC

WTC is an interesting example of diversification in the construction industry as it not only owns other businesses, but is also considered an investment firm as it holds shares in other organisations as well. WTC is composed of 5 business fields, as illustrated in figure 23, two of which it only holds shares in; hospitality and building materials. In total, WTC owns 15 firms categorised into 5 groups. In 2007/2008, WTC had a total revenue of Dhs 56 Million, and a net income of Dhs 29 Million and around 220 employees. The largest diversifiers are building materials firms, in which it holds 2% of its shares. WTC's activities range from cement production to producing building maintenance products. The home improvement diversifier consists of a factory to produce products related to building repair and maintenance. The real estate, hospitality and home improvement diversifiers are considered forward integration strategies where WTC aims to minimise costs and create more savings by sharing resources.

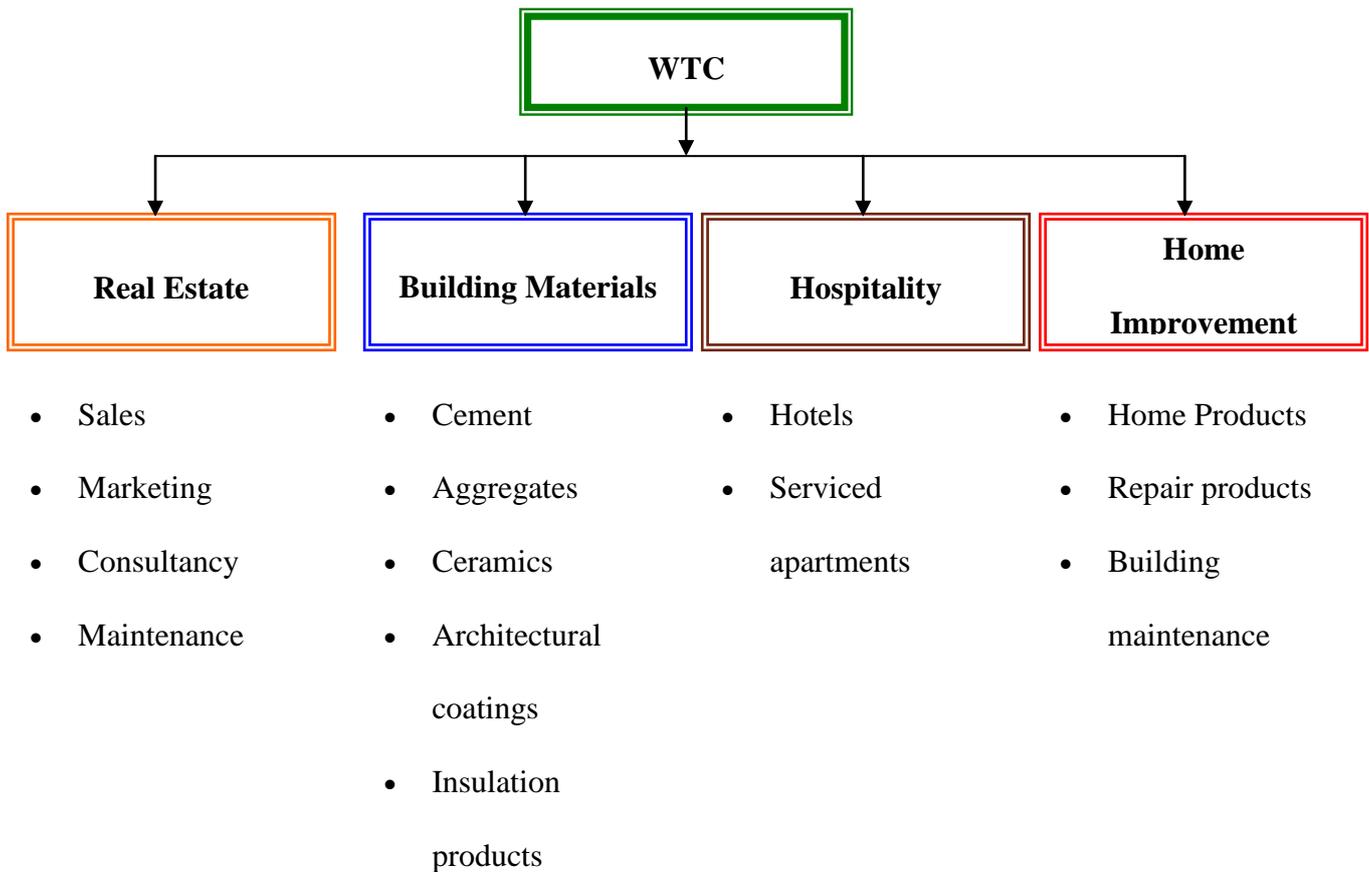


Figure 25: WTC Diversifiers

There are several diversifying principles that the executives at WTC look for when assessing potential new business lines:

- The diversifier should be large, i.e. the earnings from the first year are more than Dhs 2 Million
- There should be a management team already in place as WTC does not want to waste resources creating a new team
- The diversifier should not include complicated technology that is difficult to understand. For example, in the building materials business fields, the technologies used should be readily understood by engineers at WTC. If there are upgrades in the future, the engineers can always learn the new skills required.

- The diversifier should earn a good level of return on equity, but not necessarily return on investment
- The diversifier should prove an attractive market and future returns every time it is evaluated, otherwise it will be sold off

Assessing firm performance at WTC is an ongoing process. Each department manager submits a performance report to the executive management team every quarter. All stakeholders have to be involved in the performance measurement process. The performance measurement system analyses the whole firm, not separate business lines. WTC performance has been declining since second quarter of 2008, mainly caused by the global economic crisis and the decline in the construction industry demand in general. The performance measurement method adopted mainly depends on achieving KPI for every given period. However, before measuring KPIs, the CSFs have to be attained. The CSFs of WTC include implementation of latest technology applications, an attractive market and well trained specialised employees. Appendix 4 illustrates the performance measurement indicators used and the process in which they are incorporated.

WTC is engaged in related diversification. All the diversifiers have at least two common relatedness dimensions with the core business of WTC. The relatedness dimensions include sharing customers and management skills, serving the same niche markets, focus on new product development, are vertically linked, are impacted by the economy in the same way, and finally, are operating in the same stage of the life cycle. If the diversifier did not share at least two of the dimensions it will not be considered attractive. WTC does not encourage unrelated diversification, as it is assumed that it does not enhance firm performance and is not cost efficient. Most importantly, unrelated diversification is considered to decrease organisational learning

and the knowledge development process. In other words, it is not possible for employees to share the knowledge and experience gained from one business line with the other as each one requires different resources.

WTC has a SR of 0.32 indicating that it is highly diversified, i.e. high degree of diversification. This means that 32% of its income is coming from one sector only (building materials) which is a very risky investment. WTC implements full integration as a form of vertical strategy. They believed that is the best form as their main concern was to control quality issues and carefully integrate some engineering components that could save costs in then future. Another reason for this type of integration is because WTC wanted to improve its competitive position by coordinating its activities without competitor or supplier issues arising. They also believed that being a group of firms under one portfolio would make them stronger in facing competitive moves, for example, in aggressive pricing. However, WTC witnessed some of the disadvantages of full integration during the crisis such as production capacities were flooding the warehouses which increased inventory costs because demand was very low. WTC have implemented several strategies during the last several years that helped them overcome the crisis and not be forced to liquidate there assets. WTC has integrated its activities to create synergy. Activities such as production and logistics were shared with other businesses so that cost advantages can be achieved and quality improvements can be gained. The shared activities included human resource management, procurement functions and legal affairs. WTC also took advantages of the learning curve. The vertically connected businesses worked jointly exchanging personnel, capabilities and knowledge so that learning can become easier and faster than if each business worked independently. WTC initiated R&D projects jointly with the other businesses so that the learning curve advantages can be

realised quickly. Because of this system wide integration strategy and knowledge sharing, client satisfaction increased as projects were able to be delivered faster with the least claims.

5.4 Corporate Case Study: PFC

PFC started operations in 1973. It started in manufacturing building materials, but as there was very low demand during the 1970s, PFC closed its operations for 4 years. In 1978, PFC was bought by a contracting firm, and this was the beginning of more businesses. The first diversifier was acquired in 1983, a petrochemicals manufacturing facility located in UAE. Because it was not related to the construction industry, PFC had a difficult time trying to coordinate activities and understand the industry structure. Management problems increased and as a result both firms, the contracting and petrochemicals performance decreased. The Executive Board decided to separate both firms as different entities by establishing new management teams with their own mission and long term strategy. This proved to be a successful move as performance took peaked in the next appraisal. Over the period 1987 and 1994, the petrochemicals business grew and was generating a net income of Dhs 8 million per year. During that period PFC diversified into more businesses such as Agriculture and Insurance. Realising that there was a large market to capture in organic dairy products, PFC acquired 4 local farms. There is also the insurance sector, which PFC diversified into. The insurance sector was the first vertical integration line that proved cost savings and allowed PFC top management to consider more vertical integration lines. Accordingly, PFC re-looked into the building materials market as a form of backward integration as well. The market was very attractive and a stable future was seen during the late 1990s. PFC merged with cement and glass manufacturing firms,

which later in 2002 it acquired. During the same year, more offers were made to PFC to acquire a cement production facility. Turnover from the cement facility from the first year was Dhs 10 million. This encouraged PFC to look for more building materials investment opportunities. In 2004, PFC diversified into the steel industry, and just as its successors in related fields, it was successful. The steel sector is the highest earning business line in PFC. Figure 24 illustrates the diversifiers of PFC.

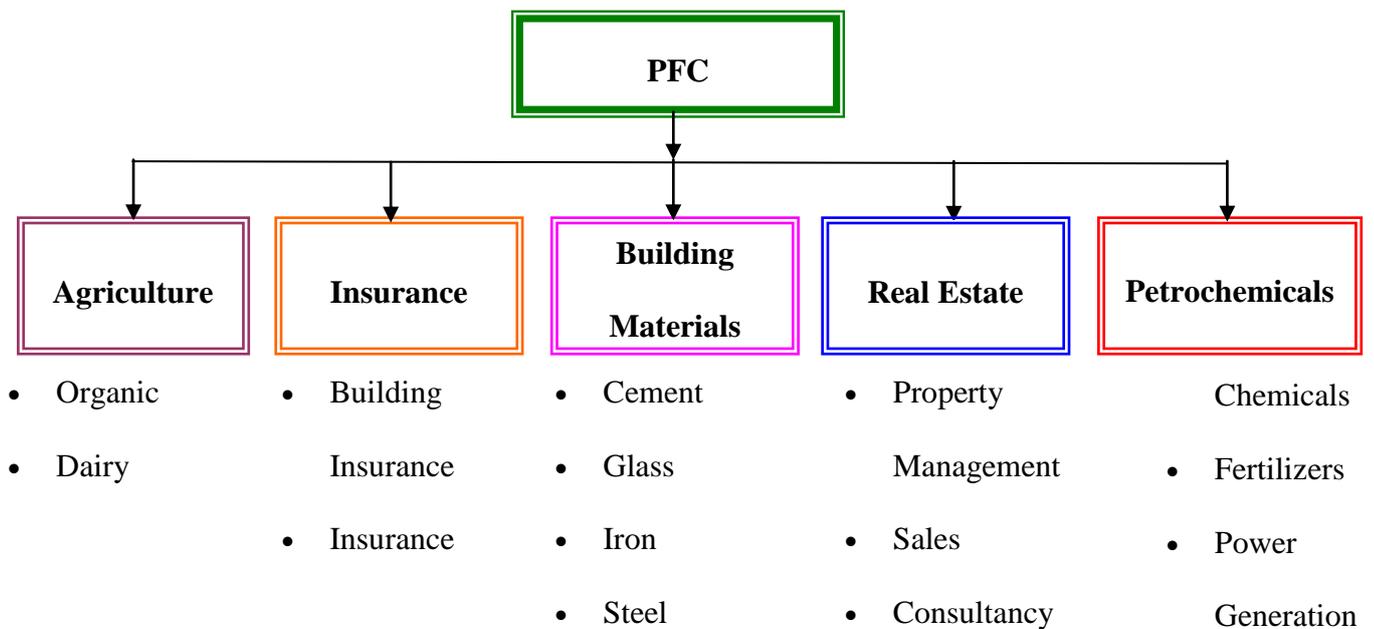


Figure 26: PFC Diversifiers

In total, PFC is owns 15 firms from five categories. Two are related to the core business of PFC and three are unrelated businesses.

Table 7 shows that the steel sector produces double the turnover of any other business line. The figures are in Millions of Dirhams. The Steel sector produces 18.7 Million Dirhams annually compared with the second largest business line; iron, with 9.6 Million Dirhams yearly. Both the sectors, iron and steel are related to the core business; construction contracting.

Agriculture	
Organic	3.6
Dairy	1.1
	4.7
Insurance	
Building Insurance	6.4
Advisory Services	2.5
	8.9
Building Materials	
Cement	5.4
Glass	7.7
Iron	9.6
Steel	18.7
	41.4
Real Estate	
Property Management	5.5
Sales	8.9
Consultancy	7.7
	22.1
Petrochemicals	
Industry Chemicals	8.5
Fertilizers	6.8
Power Generation	9.3
	24.6

Table 7: PFC turnover in Dhs Millions, 2007
 “PFC Annual Report”

In an interview with the CEO of PFC, he commented that in the long term, the current strategy of PFC is not successful because all important resources and priorities are focused on the related diversifiers, where in reality; the unrelated diversifiers have a bigger market and more attractive future earnings if more attention is provided. He says that PFC is dependent on the earnings of the building materials sector, and in the current situation this is not beneficial for the company as the whole construction sector is declining. The performance levels of PFC did improve in the short term and the advantages are reflected on the core business of PFC only; that is contracting. The new strategy should include focusing on long term firm performance by incorporating all resources from all business lines whether related or not.

The performance measurement system used at PFC is The Balanced Scorecard. There is one CSF that the company depends on to accomplish the objectives; the availability of required resources. Performance appraisal is conducted every quarter and is communicated directly to the executive committee. Continuous feedback and learning is the primary goal of the performance appraisals. The performance indicators include emphasises on innovation and increased learning among employees. The executives acknowledge that because PFC is diversified in related and unrelated businesses, there is an increased burden on administrative costs.

According to Rumelt's standards the SR of PFC is 0.58 indicating that it is moderately diversified. The executives believe that any more diversification in unrelated fields will force the financial and market performance of PFC to drop especially that the construction industry is currently very slow and it is difficult to create synergy to save costs. If more diversifiers are to be considered, they have to be vertically backward integrated to contracting because it is easier to achieve synergy.

PFC multi businesses are constantly under pressure to achieve high performance. The issues encountered by PFC include high governance costs. Integrating activities requires layers of bureaucratic managers and processes which can lead to escalating costs. A second issue is slower decision making as a result of the complicated organisational structure. Because of many business units, management meetings are held more regularly for integration reasons and as a result, conflicts of interest are increasing as each department towards their goal. There is dysfunctional control within the main management of the firm because of lack of business know-how that is required to judge business line strategic plans, operations and results. In order to overcome the problems encountered, PFC is implementing system wide alterations. This includes coordinating operational learning so that businesses can gain knowledge from each other, implementing new technologies where needed to increase capacity, develop newer production techniques and apply new standards. PFC follows taper integration as a diversification direction. It purchases some of its inputs from outsiders and distributes some of its products for external suppliers as well. It developed this strategy as part of quality control procedure.

5.5 Corporate Case Study: AIBC

AIBC was formed in 1976 by a group of entrepreneurs to establish a civil engineering firm. Until the late 1980s, as the business grew steadily, AIBC was largely concentrated on building materials and home maintenance products. However, by the start of 1991, profits were dropping and the construction market was growing at a very slow pace, which they took as a sign to diversify. The executives believe that this was a time to change to new fields where demand was high and growth is increasing. An attractive sector at that time was healthcare. AIBC invested heavily in forming laboratories and specialist screening facilities with the most advanced technology. As the demand was high, profits were made in from the fourth year of operation. The healthcare business line was highly demanded that AIBC opened another 4 laboratories in 3 years and had five year contracts with local hospitals secured. During the same time, AIBC acquired a local fashion house specializing in upscale designer wear. Also, in a short period of one year, breakeven was achieved and the business turned into a cash cow, increasing earnings year after another. In 1994, AIBC merged with a food and beverage firm dedicated to cater large hotels and resorts only. In early 1996, AIBC started its hospitality consultancy services and hotel management operations. As with the previous unrelated successors, it was successful. All the investments in the unrelated sectors has made AIBC loose focus and attention of its core business. Although the business was still active, its growth was very low, with one project per year. The company earnings were dependent on the inflows coming from unrelated fields such as food and beverages, retailing and healthcare. However by the start of the new ventures, company costs were increasing and earnings decreased. The executives agreed that a new diversification strategy should be planned. It was agreed to acquire firms that are vertically integrated with

AIBC in order to share costs and increase earnings. They also agreed to focus on the firm's core business and give it more attention and of resources priority. Consequentially, AIBC acquired firms in the building materials sector such as cement, concrete, aggregates and glass. Although profits were not witnessed quickly, the cost savings were visible immediately. Most importantly were the savings from managerial costs and sharing of facilities. Also, AIBC merged with firms operating in the home improvement sector, such as interior design and landscaping. In total AIBC owns 16 companies in 7 Categories as exhibited in figure 25.

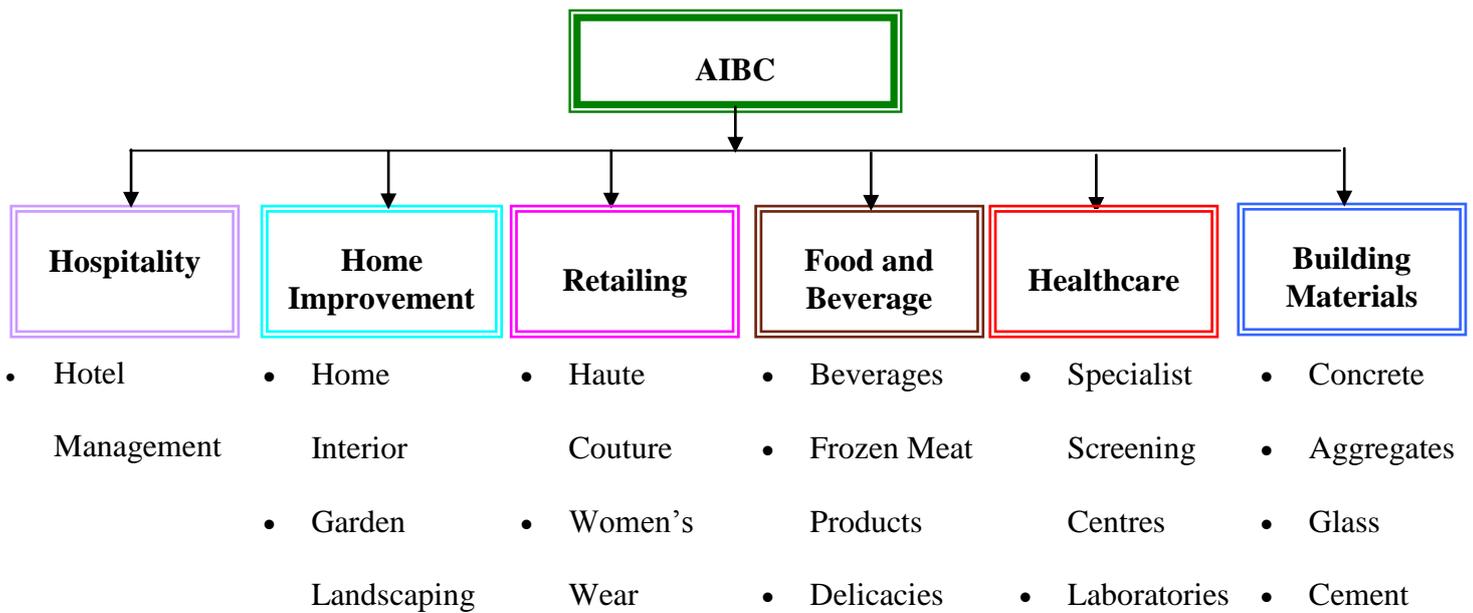


Figure 27: AIBC Diversifiers

The executives believe that the unrelated diversification only improved performance and profitability in the short term. After engaging in related diversification for the past 8 years, financially, the firm has less unnecessary costs although the market performance was not visibly better. However, the quality of products and customer satisfaction has increased rapidly, and there are fewer claims related to defect issues. AIBC decision to diversify in such a diverse portfolio is part of the plan to reduce organisational risks. If businesses were all related then a negative effect of one affects others. AIBC have the opinion that it is essential to diversify into many fields because some sectors growth prospects decline faster than others. The unrelated fields act as buffers to declining corporate performance. The main reason that AIBC pursued diversification is to broaden its product offering and its dependence on one market. The SR of AIBC is 0.85 revealing that it is moderately diversified. The reason for that is because the largest yearly earning comes from the firms operating under the building materials business line.

5.6 Corporate Case Study: MCC

MCC entered the UAE market in 1975. It entered as a contracting company and continued its activities for 10 years before realizing that performance could be increased even further if the firm changed their strategic direction to diversification instead of its outdated market penetration strategy. It was in late 1980s, the firm acquired its first diversifiers; Building machinery and components. As expected, the performance levels improved, especially employee learning as a result of the job rotation strategy throughout the different business lines. In addition, there was more control of the procurement process because MCC owned most of the machinery and components needed. This has affected the quality positively and as a result clients were always satisfied. Not long after, MCC established its own building materials facilities to produce concrete and its by-product, aggregates. During the same time, MCC merged with a cement production factory as well. All this was part of the backward vertical integration strategy of MCC. All the time, MCC was continuously looking for opportunities to integrate with firms in which they could share resources with. However, MCC came to a point where it realised that it acquired enough backward integration to control the production processes and that it was time to look for opportunities in forward integration. In late 1990s, MCC established its own real estate company where it provided property management services for those developers that lacked this essential skill. Because MCC developed an excellent reputation in property management services, an offer came to manage five star hotels. Realising the good future opportunity, MCC accepted and established another firm dedicated to hospitality management. The latest addition to their portfolio was the insurance sector. Partnering with local banks, MCC manages to provide home insurance and finance services to clients. The three sectors; real estate, hospitality and insurance are

considered forward integration strategies. MCC admits that in both the short and long term, performance levels increase as a result of engaging in vertical integration.

Currently, MCC is engaged in 6 business fields and owns a total of 14 firms as seen in figure 26.

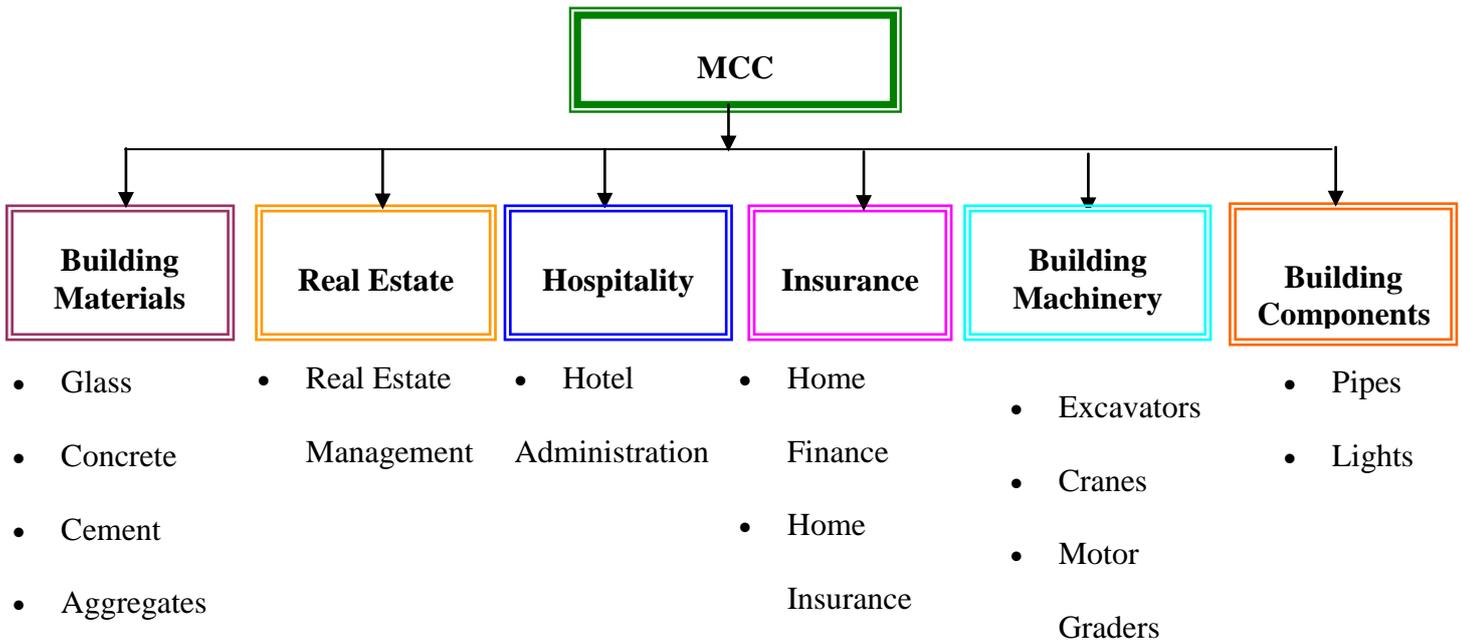


Figure 28: MCC Diversifiers

MCC has a SR of 0.24 which suggests that they are highly diversified. Their highest earning sector is the building machinery sector. MCC acknowledges that there are other factors that have enabled it to successfully diversify in to related business:

1. The availability of knowledgeable employees who are willing to learn and share with others
2. Physical resources. As the facilities are close to each other and the production capacity of each is high, this has allowed MCC to reach economies of scale

3. Develop a core competence that the competitors can not imitate easily.
MCC has a core competence in sharing and providing all required resources, from raw materials to machinery
4. An internal scan of the firm should be conducted at least twice a year to ensure that the strengths have not turned to weaknesses and any opportunities have been capitalised on. Competitors are analysed as well to identify any dangerous moves that if noticed too late can have a detrimental affect on the firm
5. Identify the profit pools in the firm. Know where the profits are made the most and focus on exploiting them efficiently
6. Coordinating a differentiation strategy with the diversification direction is vital for success. There diversifier has to be different in order to achieve competitive advantage. In MCC, differentiation comes in the form of product bundling. Several services are offered to the client in one package which costs less for all stakeholders. For example, instead of having sub-contractors for electrical works, MCC can offer this service
7. Create a management team for each firm that can overlook the business without loosing focus on diversifiers in the same portfolio
8. Although separate management teams are created for each firm, MCC top management intervenes when needed to make sure that performance levels are acceptable and provide assistance during crisis
9. Owning the distribution network to save on logistics costs

The performance measurement system in MCC is conducted quarterly. The performance of each firm is combined to see the overall performance level of the

organisation. It is assumed at MCC that if one diversifier declines, this will have a spill over effect on the whole firm. Performance is measured in several parameters; financial, market-based and internal growth. Benchmarking is a vital component of the performance measurement system. MCC performance measurement toolkit consists of:

- Achieving a pre-established set of KPI in fields of market, internal innovation, knowledge retention, employee productivity, R&D and financial goals
- Ensure that CSFs are in place before carrying out any performance measurement. The CSFs of MCC include excellent product quality, positive cash flow, and good employee retention

Appendix 5 illustrates the performance measurement system implemented by MCC. Since 2007, performance levels have been decreasing rapidly. MCC is considering divesting some of its business lines if situations do not improve within the next 18 months. However, it is implied that industry factors are to blame because they have more power over the profitability of the business. MCC does not consider that its strategic direction or related diversification has a negative impact on the performance of the firm.

5.7 Summary

The firms considered for case studies are all engaged in related or unrelated diversification, or in some cases, in both. The firms performance levels have been declining over the past three years because of the worldwide economic crisis. Firms have different ways of deciding which businesses to diversify into. Some firms have formal strategic planning processes to decide the most profitable sectors the firm should diversify into. Others take opportunities as they come, such as, buying a business that was offered on a very low price. Other contractors see themselves diversifying into another business as a way to control the core product offering of their portfolio. The majority of the contractors diversify into related firms that can create synergy and add value to the company. Related diversification is mostly implemented by vertical integration whether into forward or backward units. Taper integration, where firms produce or own some of their input factors such as raw materials is more common than full integration, in which it owns the full production facility. Although this enables full control, there is the risk of excess supply. Performance measurement is conducted by all contractors considered for this research, however each one has their own technique. Some firms conduct performance measures quarterly, others yearly. There is no prescribed way to implement performance measurement systems. Each entity can choose what's suitable and fits their requirements and at the same time enables them to achieve their goals.

Chapter 6

Data Discussion

6.1 Related and Unrelated diversification

The data discussion will incorporate the analysis from the SPSS and the case studies conducted on the five contracting firms. The hypothesis validity is reported after each discussion. Hypothesis 2 and 3 will be tested and discussed only after hypothesis 1 is approved.

Recall hypothesis 1: Organisations engaged in related diversification prove higher levels of performance than firms involved in unrelated diversification. Results of performance indicators were found to be positively linked with related diversification. Previous studies indicated that researchers had mixed results depending on the type of performance indicators used; market based or accounting based. For this purpose, this hypothesis incorporated both performance perspectives. The accounting based indicators include ROA, operating profit and annual earnings. Market based indicators include client satisfaction and revenue per employee.

The results for testing this hypothesis are explained in the next section.

Pearson's Correlation Coefficient

		Operates in RD	Revenue per employee is improved with RD	Annual earnings has increased with RD	Excellent ROA is dependent on RD	Operating profit has improved over past 5 years	Client satisfaction increased in projects handled by RD
Operates in RD	Pearson Correlation	1	.445	.698**	.317	.580**	.503**
	Sig. (1-tailed)		.000	.000	.000	.000	.000
	N	100	100	100	100	100	100
Revenue per employee is improved with RD	Pearson Correlation	.445	1	.512	.477	.656	.337**
	Sig. (1-tailed)	.000		.000	.000	.000	.000
	N	100	100	100	100	100	100
Annual earnings has increased with RD	Pearson Correlation	.698**	.512	1	.496*	.669	.326**
	Sig. (1-tailed)	.000	.000		.000	.000	.000
	N	100	100	100	100	100	100
Excellent ROA is dependent on RD	Pearson Correlation	.317	.477	.696*	1	.455	.462
	Sig. (1-tailed)	.000	.000	.000		.000	.000
	N	100	100	100	100	100	100
Operating profit has improved over past 5 years	Pearson Correlation	.580**	.656	.669	.455	1	.527
	Sig. (1-tailed)	.000	.000	.000	.000		.000
	N	100	100	100	100	100	100
Client satisfaction increased in projects handled by RD	Pearson Correlation	.503**	.337**	.326**	.462	.527	1
	Sig. (1-tailed)	.000	.000	.000	.000	.000	
	N	100	100	100	100	100	100

*. Correlation is significant at the 0.05 level (1-tailed).

**. Correlation is significant at the 0.01 level (1-tailed).

Table 8
 Pearson's Correlation Coefficient on Related Diversification and it's Impact on Performance

Several important findings come into view from the empirical analysis presented.

Table 8 displays the Pearson correlation coefficient test of the connection between

related diversification and performance. The factors that represent performance have been elaborated on the prior section. The following findings have been identified:

1. Related diversification is significantly positively related to revenue per employee, with $R = .445$ and the significance value is less than .01 (one tailed test). To make further direct conclusions on the correlation between the variables operating profit and revenue per employee, the coefficient of determination or R^2 is 0.198 or 19.8%. This implies that revenue per employee shares 19.8% of variability in related diversification. Even though revenue per employee is highly correlated with working in a related business, it only accounts for 19.8%, which indicates that there are another 80.2% of other variables responsible for the variation, i.e. increasing employee revenue. It is important to note that although 80.2% is shared by other variables. This does not indicate that related diversification does not have a big impact on employee revenue. It only explains one factor of the issue, and assumes there are other factors accounting for the variability. These include transferring employees with special skills between units to utilise their knowledge and benefit the operations involved as highlighted by project managers in PFC and AIBC.
2. There is a strong positive linkage between annual earnings and related diversification with a correlation of .698, $p < 0.01$, and $R^2 = .487$ or 48.7%. This is an extremely high percentage to indicate that only related diversification is responsible for 48.7% of the performance level. Although there is an additional 51.3% of variables responsible for the variation, this is composed of different elements. The case studies suggest that the variability may be caused by factors such as type of vertical integration, increased

demand, and the willingness of management to reinvest into the business line such as improved technology. Annual earnings also increase as a result of resource reallocation by transferring personnel and capital between business units to create synergy. Annual earnings can be increased by achieving synergy through resource replication, as suggested by all firms investigated. This is done by transferring the intangible knowledge and capabilities such as expertise between the departments or diversifiers.

3. Excellent ROA is highly connected with related diversification, $.317$ and $R^2 = .100$ or 10%. Therefore related diversification shares only 10% of increased levels of ROA. The remaining 90% of variability is caused by mainly operating the facilities to the maximum limit and create value. The more productivity levels the facilities can handle, the higher ROA will be. The case study analysis indicates that it is critical that there is operational coordination at the physical level to make sure that the right components and specifications with the required quantities are available for timely production. Instead of trying to coordinate suppliers to achieve this goal, it is preferred that the firm integrates within itself to increase the ROA. Also, as indicated by many executives, ROA is higher in firms that own several facilities such as factories and warehouses. In many cases, these assets are controlled, and if not, they will be dissolved so that the ROA at the end of the year is not affected. Machinery and equipment have to be utilised as well as this aids in improved ROA value.
4. A positive relationship is witnessed between operating profit and related diversification. The connection shows a correlation of $.580 < 0.01$. This explains that operating profit has improved during the past 5 years in all the

firms investigated, as they got more involved in related diversification. However, there is a degree of variation. The R^2 is .336 or 33.6%, which means that there is a variation of 66.4% that is affecting operating profit other than related diversification. There are several factors that influence good operating profits for the construction firm. Based on the case study investigations carried out for this research, managers emphasise the need for corporate decisions to consider the best structure to create a cohesive firm especially if it is active in several businesses. Executives highlight standardisation, as an integration mechanism is important. Standardising activities, resources and the offering characteristics between businesses is essential to reduce unwanted costs. By operating standardised activities such as R&D, owning similar resources such as equipment and working with comparable product features such as operating systems, firms do not need to worry about coordinating to gain economies of scale. It is also essential that firms share their value adding activities. When business divisions bring together their value adding operations, e.g. transportation to result in scale advantages, then synergy is created, costs decline, and operating profits increase. It is vital that the corporate parent manages some of the value creating activities centrally.

5. A positive association is illustrated between increased client satisfaction and related diversification. There is a correlation of .503 and an R^2 of .253 or 25.3%. This means that related diversification is accountable for more client fulfilment in no excess of 25.3%, indicating that there is a 74.7% of variation. The other factors responsible for client satisfaction include faster conflict resolution and claim settlement procedures, downstream buyer relations,

industry phase (which results in a successful profitable project) and flexibility (the ability to provide the client with options or allow certain changes to take place later at a low cost).

6. Revenue per employee is positively correlated with annual earnings in related diversification with a correlation of .512 and $R^2 = .2621$ or 26.2%. Related diversification no doubt has a strong role, other factors that constitute the 73.8% include knowledge sharing across different business subdivisions. The case studies indicate that if annual earnings and revenue per employee are both high then both tangible and intangible resources are being fully utilised in the firm. The know-how is difficult to create and is considered to be a competitive advantage for any firm who possesses it. If it is exchanged and a joint pursuit is given to share skills, then this will make activities more efficient and this will be reflected on the annual earnings. Revenue per employee is also highly correlated with all the following; excellent ROA, improved operating profit, and increased client satisfaction. The ROA will be high because employee input is being reflected in the output of the facilities and production. The correlation between the ROA and revenue per employee only accounts for 22.8%. The other elements that affect the connection between the two variables include knowledge sharing. This is explained in the same manner for the linkage between operating profit and revenue per employee although the variation is higher; 43%. Related diversification plays for the 43%, but the other 57% is composed of essentials as stated by the firm executives, such as, aligning processes to create synergy. This is specifically done by improving the bargaining power of the employees by allowing them to offer the clients customised packages of related products along with

customized after sales support, e.g. maintenance services or advice. Revenue per employee is correlated with client satisfaction but not as highly as what was witnessed with other variables. The $R^2 = .1135$ or 11.4%. The other elements included in the variability 88.6% are many ranging from management decisions to external environment forces. However, generally speaking, the case studies suggest that if firms are constantly engaging in businesses that are value creating and expanding their operations, then employees will be more productive as they apply the knowledge and know-how they gained into other businesses, therefore producing excellent results that satisfy clients and at the same time revenue generated increases.

7. Annual earnings and excellent ROA are both dependent on related diversification for success. These two factors share a correlation of .496 which is a positive strong connection. The R^2 is .246 or 24.6% indicating that annual earnings are accountable for 24.6% of good levels of ROA. The 75.4% left, according to analysis of the case studies, it resulted from sharing core competences that increase income and are hard for other competitors to imitate. The core competences that become a source of competitive advantage are mainly to do with the processes and the production process. This is best gained through upward integration where opportunities for innovative production is higher, such as, owning a special kind of equipment or machinery. Annual earnings also increase with the operating profit. These variables have a R^2 of .4475 or 44.8%. This is a high variation to account for by one variable. This indicates that as long as annual earnings increase, operating profit will be at good levels. However, related diversification has a strong impact in leveraging resources to reduce costs and boost the financial

situation. The 55.2% of variation accounted for by other elements involves the ability to stay focused as not being so achieves low economies of scale. Generally, the less specialised the firm, the lower the opportunities it has to arrange its activity system and leverage resources. Contractors find it vital to limit their flexibility as any minor change can show large impacts on the financial status. Managers highlight that it is impossible to provide all services to the client and still be able to achieve good operating profits. Instead, it is better to be less specialised and be forced to specific operational necessities as not to incur undesirable costs.

8. Client satisfaction and operating profit have a correlation of .517, a strong positive relation. The related diversification environment allows for more interaction and more project coordination and offerings for the client. All this integration provides a lower cost to the firm thus increasing its operating profit. The $R^2 = .2777$ or 27.8%. This suggests that the variability of 72.3% includes other elements to make clients satisfied such as quality factors. Related diversification involves lower organisational complexity levels, therefore management issues will be simpler and communication is easier. This decreases costs and makes clients more satisfied. There also lies a positive correlation between client satisfaction and annual earnings with a correlation of .326, $R^2 = .106$ or 10.6%. Although the correlation is high, the variation shared between the two is only 10.6% which proposes that 89.4% of variation is shared by other factors. In reality, the construction sector is not a service based business, and although client satisfaction can increase profits in the long term as they will often be returning customers, the main costs lie in the production processes and elimination of unwanted costs. The 89.4% of

variation is composed of how the activity system is designed and value is created. Replication of efforts, whether physical or employee skills should not be done if not required.

Table 8 illustrates that all factors that affect performance level have a positive connection when present in a related diversification field.

It is essential to note that regardless of what variability is accounted for by other factors than related diversification, the relationship is still positive and this signifies an important conclusion. The results generated produce important implications for the strategic management theory. As indicated by Rumelt's study (1994), and other studies conducted to find the relationship between diversification and performance, it is concluded that related diversifications produces good performance levels. However, studies by Rumelt (1994), Palich et al (2000), Oliver (1997) indicate that unrelated diversification has negative or no effect on performance. This will be discussed in the following section.

The results of increased performance levels and unrelated diversification are shown in table 9.

Pearson's Correlation Coefficient

		Operates in UD	UD has more effect on operating profit	UD increased revenue per employee	UD increases annual earnings	UD improves ROA	Client satisfaction increases with UD
Operates in UD	Pearson Correlation	1	-.352	.270	-.102	-.174**	.640*
	Sig. (1-tailed)		.000	.000	.000	.000	.000
	N	100	100	100	100	100	100

UD has more effect on operating profit	Pearson	-.352	1	-.102	-.236**	.183*	-.361**
	Correlation						
	Sig. (1-tailed)	.000		.000	.000	.000	.000
	N	100	100	100	100	100	100
UD increased revenue per employee	Pearson	.270	-.102	1	.102	.103	-.129**
	Correlation						
	Sig. (1-tailed)	.000	.000		.000	.000	.000
	N	100	100	100	100	100	100
UD increases annual earnings	Pearson	-.102	-.236**	.102	1	-.189	.010
	Correlation						
	Sig. (1-tailed)	.000	.000	.000		.000	.000
	N	100	100	100	100	100	100
UD increase ROA	Pearson	-.174*	.183*	.103	-.189	1	-.009
	Correlation						
	Sig. (1-tailed)	.000	.000	.000	.000		.000
	N	100	100	100	100	100	100
Client satisfaction increases with UD	Pearson	.640*	-.361**	-.129**	.010	-.009	1
	Correlation						
	Sig. (1-tailed)	.000	.000	.000	.000	.000	
	N	100	100	100	100	100	100

*. Correlation is significant at the 0.05 level (1-tailed).

**. Correlation is significant at the 0.01 level (1-tailed).

Table 9
Pearson's Correlation Coefficient on Unrelated Diversification and Performance

Table 9 shows the results of performance factors operating in unrelated diversification. The same performance indicators used in the earlier test of related diversification and performance are applied here to make comparison fair. The central finding of this second part of the first hypothesis is that there are generally negative and weak correlations. The major correlation result emerging from running the Pearson's coefficient test is:

1. There lies a strong weak negative correlation between operating profit and unrelated diversification. There is a correlation of -.352 and $R^2 = .1239$ or

12.4%. The variability remaining, 87.7% indicates that several other elements are responsible for poor operating profits in unrelated diversification other than the strategy. From the literature review, it was seen that unrelated diversifiers bring along with them extra complications such as more processes, increased decision making and difficulty in handling management issues. Resources are not leveraged efficiently and underutilisation can occur if careful planning is not present. These are just some of the disadvantages that can bring operating profits down. In addition, this correlation was supported by Christensen and Montgomery (1981) who specifically analysed that unrelated business fields may have its disadvantages on profits, but there are other factors as well. These include the inability of sharing knowledge among business units because they are unrelated.

2. Revenue per employee is positively weakly correlated with unrelated diversification. This was previously measured by Berger and Ofek (1995), and the results were negatively correlated. However, the study conducted by Berger and Ofek was analysing healthcare industry specifically. For that reason, the results may be contradicting as this study looks at contractors in construction only. The correlation of .270 has a R^2 of .0729 or 7.29%. This is still low variation. The remaining 92.71% of variation is caused by inability to share knowledge, facilities or apply skills learnt in one business unit into another as there is no coordination in unrelated diversification. There are barriers to what employees can be productive at in unrelated diversification so this inhibits them being creative and so the revenue generated by each will decrease as specifically highlighted by executives in AIBC.

3. Annual earnings and unrelated diversification have a correlation of -0.102 , which suggest a very weak negative connection. The R^2 is $.0104$ or 1.04% which states that the variation shared between unrelated diversification and annual earnings is very low. In other words, unrelated diversification has very weak impact on the annual earnings and there are other causes for it to increase in unrelated diversification environment. Causes may be related to demand to the products offered, industry life phase and the firm infrastructure. As Chatterjee and Wernerfelt (1988) reflected on in their study, if demand is high for certain products within a corporate portfolio, regardless of it being related or unrelated, then this will impact the annual earnings. Also, proposed in a research by Grant et al (1988), the life phase of the industry plays a major role in deciding where profits will be coming from and at what rate. It is assumed that if the industry is growing or in early maturity, annual earnings will increase or stabilise for some time before declining. Firm infrastructure includes the activities that support the management of the firm such as planning, accounting, finance, legal, and quality and government affairs. If these activities were not efficient and accurate then the annual earnings will suffer as proposed by senior officials of WTC and MCC.
4. Client satisfaction is negatively weakly correlated with unrelated diversification, -0.174 . The R^2 is $.0302$ or 3.03% . This explains that 96.97% of the variability is caused by other elements, and that only 3.03% of it is resulted by unrelated diversification. According to Palich and his co-writers, client satisfaction is unrelated to the type of diversification chosen, but other researchers impose that client satisfaction is related to operating profit which is positively affected by related diversification (Grant et al, 1988). Client

satisfaction can be affected by overall service and on time project completion as indicated by the CEO of MCC. The results generated show that client satisfaction is negatively correlated with operating profit, opposing what Grant and his colleagues (1988) proposed in their research. Again the sample that was used in their research was composed of 500 international firms whereas this research specifically investigates 5 case studies and 100 questionnaires. The correlation of .183 and R^2 of 3.35% imply that unrelated diversification is not a good business line to thrive client satisfaction and operating profits. A major factor that can affect the operating profit in unrelated diversification is the business scope (Pitts and Hopkins, 1982). If a firm was engaged in unrelated fields, it is better if the business lines are increased so that risk is spread more easily and any losses from one line will not affect another, as concluded in the study by Berger and Ofek (1995).

5. There is a correlation of .640 between improved ROA and unrelated diversification. There is also a R^2 of .4096 or 40.96%. This is a very high variability to share with unrelated diversification alone. This means that unrelated diversification has a huge impact on the ROA. As the ROA is higher with unrelated diversification than related diversification, it is assumed that assets are utilised better in an unrelated business line. This is supported by two studies conducted by Markides and Williamson (1996), and Tallman and Li (1996). The case study investigations suggest that ROA is not affected by the business sector which a firm follows, but rather, the basic firm infrastructure and the way the activities are managed. Managers also emphasise on the need for firms to always use full capacity of any assets even if they have to sell or distribute any excess production. ROA and operating

profit in unrelated diversification have a weak negative correlation of $-.361$ and R^2 of 13%. This means that ROA only shares 13% of the variability of operating profit in unrelated diversification. The other 87% is caused by inability to leverage resources and align activity positions which results in extra costs.

In general, performance levels shows negative weak correlations with unrelated diversification, the most significant are discussed above. The case studies indicate that financial performance indicators such as annual earnings and operating profits have no correlation or very weak linkage as the type of diversification does not impact performance.

To validate hypothesis 1, related diversification has superior impact on corporate performance, especially on indicators such as client satisfaction and revenue per employee. Financial performance indicators also show positive connection with related diversification. However, the financial performance indicators show no negative correlations with unrelated diversification which assumes that there is no connection between the two variables. Nevertheless, the positive correlations indicate that related diversification is more effective on firm performance.

Therefore hypothesis 1 is true, which gives approval to test the second and third hypothesis

6.2 Relatedness Level

Hypothesis 2: Organisations with moderate levels of related diversification show improved performance levels.

This hypothesis was initially proposed by Rumelt's (1982) research which specifically looked at the level of diversification required to achieve maximum performance. In his study on relatedness levels in manufacturing firms, Rumelt concluded that moderate levels are the least risky, provide employee flexibility, require less administrative hassle and increase performance. In tables 10, 11, 12, the results of impact of each high, moderate or low levels is analysed by comparing data compiled.

**Firm performance increased Firm performance decreased
o * High Diversification**

High Diversification		Firm performance increased
Strongly disagree	Mean	3.25
	N	4
	Std. Deviation	1.500
disagree	Mean	3.60
	N	15
	Std. Deviation	1.404
unsure	Mean	3.62
	N	68
	Std. Deviation	1.079
agree	Mean	3.50

	N	8
	Std. Deviation	1.309
strongly agree	Mean	4.00
	N	5
	Std. Deviation	1.225
Total	Mean	3.61
	N	100
	Std. Deviation	1.154

Table 10

Survey Data Summary of High Diversification and Performance

The majority of the individuals who completed the survey suggest that they are unsure if a high diversification level does lead to increased performance. The participants of the interviews indicate that although high diversification broadens the firm business scope and increases its market share, this is not necessarily reflected in good performance. In many cases, these participants do not encourage high diversification and dependence on one business unit to generate the most revenue as this would increase risk to the firm. Its approved in high diversification, that if the highest earning unit suffers, all diversifiers will suffer as a result. However, in some international construction conglomerates, high diversification is a normal portfolio composition. The participants suggest that this is possible after several years of experience and establishment within the area. It also requires the management to dedicate high administrative costs and time to create synergy within the units regardless of whether they were significant or not.

**Firm performance increased Firm performance decreased o
* Moderate Diversification**

Moderate Diversification		Firm performance increased
Strongly agree	Mean	4.50
	N	4
	Std. Deviation	.577
agree	Mean	3.62

	N	61
	Std. Deviation	1.251
unsure	Mean	3.69
	N	13
	Std. Deviation	1.128
disagree	Mean	3.28
	N	18
	Std. Deviation	1.227
strongly disagree	Mean	3.75
	N	4
	Std. Deviation	1.258
Total	Mean	3.61
	N	100
	Std. Deviation	1.154

Table 11

Survey Data Summary of Moderate Diversification and Performance

However, results are different when participants asked about moderate diversification and performance. The majority, 64% agree that a moderate level achieves high performance. The interviewees imply that it is healthier for an organisation not to have one major business line that generates the most income. A better strategy is to spread out the risk of decreasing income suddenly. Rumelt's (1994) study indicated that manufacturing firms that exhibited the best performance followed moderate diversification, where most diversifiers generated the same level of profits. Moderate diversification allows a firm to create more synergy because the businesses will be similar in capital cost, size and number of projects. Literature review indicates that synergy improves performance (Prahalad and Bettis, 1986). There are also a 22% of the participants who disagree that moderate levels of diversification increase performance. Executives of the firms studied indicate that moderate levels do not allow focus in the firm, and that does not create specialisation which affects the ability of a firm to achieve competitive advantage. In the long term, contractors will find their performance declining because there will be competitors who will provide

specialised products or services. It is also recommended that in an intense competitive industry such as construction, firms should focus their business composition. As the interviewees suggest, focused strategy is best suited with moderate diversification to increase resource and employee leverage.

**Firm performance increased Firm performance decreased o
* Low Diversification**

Low Diversification		Firm performance increased
strongly agree	Mean	3.83
	N	6
	Std. Deviation	.983
agree	Mean	3.68
	N	19
	Std. Deviation	1.108
unsure	Mean	3.62
	N	42
	Std. Deviation	1.168
disagree	Mean	3.59
	N	27
	Std. Deviation	1.217
strongly disagree	Mean	3.17
	N	6
	Std. Deviation	1.329
Total	Mean	3.61
	N	100
	Std. Deviation	1.154

Table 12:

Survey Data Summary of Low Diversification and Performance

Low diversification levels are not supported by 48% of the participants. 33% are in favour of the strategy and 19% are unsure. This creates blurred results as contracting executives compare low diversification with moderate diversification. They suggest that the benefits are similar but moderate diversification has both the advantage of high and low diversification. Low diversification indicates that there is no business unit that generates earnings more than another because of the absence of focus or differentiation strategies. Participants disapproving of this strategy imply that it creates no competitive advantage or unique resources for the firm. However the 33% of participants approving of low diversification say that risk is minimal and there is a high degree of flexibility to divest or integrate any unit that is not functioning well with another department.

6.3 Relatedness Type

Hypothesis 3: Operational relatedness increases performance levels more than strategic relatedness. This hypothesis was supported by a study carried out by Venkatraman and Grant (1986). However, they have used only financial indicators to prove its impact on corporate performance. This research has added client satisfaction and revenue per employee. Running the partial correlation tests on both strategic and operational relatedness, the following results were obtained.

Descriptive Statistics

	Mean	Std. Deviation	N
Improved Operating profits	2.61	1.254	100
Increased annual earnings	3.22	1.299	100
Increased revenue per employee	2.09	1.164	100
Client satisfaction improved	3.64	1.283	100
Strategic Relatedness	2.81	1.376	100

Table 13

Descriptive Statistics of Strategic Relatedness and Performance

Descriptive Statistics

	Mean	Std. Deviation	N
Improved Operating profits	2.18	1.118	100
Increased annual earnings	3.41	1.152	100
Increased revenue per employee	3.43	1.325	100
Client satisfaction improved	2.84	1.216	100
Operational Relatedness	1.20	1.462	100

Table 14

Descriptive Statistics of Operational Relatedness and Performance

As shown in table 13 and 14, strategic relatedness shows a smaller mean than operational relatedness indicating that firms strongly agree that operational relatedness has more effect on performance. In addition, operating profits and annual earnings share similar impact levels by both strategic and operational relatedness. However, results of client satisfaction and revenue generated per employee are opposite in strategic and operational relatedness. Client satisfaction is remarkably higher in strategic relatedness, as supported in a study by Grinyer and his co-authors (1980). The case study analysis indicates that strategic decisions such as creating CSF that are applicable to several business units can save administrative and quality control issues, therefore clients are more fulfilled. Revenue per employee is higher in operational relatedness because of the skill similarity that can be leveraged and transferred among businesses. Employees also get a chance to apply their skills and expertise where required to create synergy and more integration. This increases the revenue generated by each employee because they are more productive.

Next the relationships between each type of relatedness and performance are examined in tables 14 and 15.

Correlations

Control Variables			Improved Operating profits	Increased annual earnings	Increased revenue per employee	Client satisfaction Improved
Strategic Relatedness	Improved Operating profits	Correlation	1.000	.534	.004	.264
		Significance (1-tailed)	.	.000	.000	.000
		df	0	97	97	97
	Increased annual earnings	Correlation	.534	1.000	.067	.153
		Significance (1-tailed)	.000	.	.000	.000
		df	97	0	97	97
	Increased revenue per employee	Correlation	.004	.067	1.000	-.137
		Significance (1-tailed)	.000	.000	.	.000
		df	97	97	0	97
	Client satisfaction Improved	Correlation	.264	.153	-.137	1.000
		Significance (1-tailed)	.000	.000	.000	.
		df	97	97	97	0

Table 15

Correlations between Strategic Relatedness and Performance

Generally, strategic relatedness shows a mixture of negative weak, positive weak and no correlations with the performance variables tested. Annual earnings and operating profits increase in strategic relatedness with a correlation of .534. This produces a R² of .285 or 28.5%. This means that annual earnings account for only 28.5% of the variance in operating profits under strategic relatedness. This is a high percentage for obtaining such high financial performance in strategic relatedness alone. Case study analysis suggests that strategic relatedness does show improved financial performance because all the main and highly impacting decisions are controlled by top management and rarely do mistakes happen as in the operational levels. Client satisfaction and operating profits have a R² of 0.6969 or 6.97%. This means that client satisfaction improved by 6.70% because of operating profit in strategic relatedness. The remaining 93.3% of variability can be caused by achieving

organisational goals on time, improved client-firm communication and a clear corporate identity as stated by the case study analysis. Revenue per employee has very low or negative correlation with all variables under strategic relatedness. This indicates that employees can very unproductive. A reason for this is because employees are not able to exert their skills and capabilities as freely as they would in operational relatedness.

Correlations

Control Variables				Improved Operating profits	Increased annual earnings	Increased revenue per employee	Client satisfaction Improved
Operational Relatedness	Improved Operating profits	Correlation		1.000	.618	.633	.163
		Significance (1-tailed)		.	.000	.000	.000
		df		0	97	97	97
	Increased annual earnings	Correlation		.618	1.000	.554	.113
		Significance (1-tailed)		.000	.	.000	.000
		df		97	0	97	97
	Increased revenue per employee	Correlation		.633	.554	1.000	-.327
		Significance (1-tailed)		.000	.000	.	.000
		df		97	97	0	97
	Client satisfaction Improved	Correlation		.163	.113	-.327	1.000
		Significance (1-tailed)		.000	.000	.000	.
		df		97	97	97	0

Table 16
Correlations between Operational Relatedness and Performance

Generally, operational relatedness shows better performance results than strategic relatedness, however, the difference is not significant. Client satisfaction is negatively correlated with revenue per employee with a R^2 .1069 or 10.69%. This means that revenue per employee shares only 10.69% of the variability with client satisfaction, which means that there is another 89.31% of variability caused by other

factors. This is an important finding as it indicates that operational relatedness does not negatively influence client satisfaction as indicated by the correlation -0.327 . Annual earnings and operating profits are positively highly correlated with each other in operational relatedness. The R^2 of $.381$ or 38.1% ensures that operating profits compliment annual earnings with a significant portion in strategic relatedness. This is also reinforced by executive opinions from the case study analysis. It was suggested several times that financial indicators support each other, i.e. if one financial indicator was increasing, another would increase as well. Revenue per employee is positively highly correlated with operating profits and annual revenue. As explained earlier, this is because in operational relatedness, the skill similarity between activities allows transfer of employees and so they show more productivity.

To validate the hypothesis presented, operational relatedness has stronger impact on financial and employee performance. Client satisfaction, a common measure of performance considered by many researchers such as Tallman and Li (1996), Prahalad and Bettis (1986), and Palepu (1985), does not indicate good levels in strategic relatedness.

6.4 Summary

Several vital findings have emerged from the data discussion above. First, corporate performance is not affected by related or unrelated diversification only, but the type and level of diversification have equal affects as well. Second, there are many ways in which the variables, diversification level, diversification type may be measured, and it is up to the researchers decision to find the optimal method. Third, performance measurement is a very broad subject, with many studies each with its own performance definition and variables.

The major finding from this discussion is that the entire hypothesis was proved true. Related diversification is more superior on performance than unrelated diversification. A highly researched topic, most conclusions generated from prior studies supported this proposition such as Rumelt (1982), Grant et al (1988), Michel and Shaked (1984). Related diversification has shown high correlations with all performance indicators, whereas unrelated diversification has illustrated poor performance results. The results suggest that businesses that are strategically similar allow the corporate parent to manage the business more effectively and efficiently. Moderate diversification levels have been identified as best for performance according to the surveys conducted. Although the opinions were vague as to whether low diversification was good or not, moderate diversification had most support. High diversification was not favoured and the costs obviously outweigh its benefits, according to the interviewees. Operational relatedness showed its benefits on many aspects of performance except client satisfaction. Strategic relatedness had its favour on client satisfaction only, but exhibited poor performance in all other variables. Interviewees recommend operational relatedness more than strategic relatedness as the consequences and benefits are witnessed within a short time span. With strategic relatedness, client

satisfaction is not measured until project handover, and planning processes are very long and require both control and quality measurement techniques. As strategic relatedness is not found to be connected with high performance, this might be due to the fact that the performance indicators used are not able to measure synergy. Also, the poor financial indicators shown under strategic relatedness is because they suggest short term performance only. However, if the performance indicators used market based performance measures, the results may have been different (Balakrishnan and Fox, 1993). To summarise, a contractor operating in a related diversification, with a moderate level of diversification in an operational related environment would show improved overall firm performance.

Chapter 7

Conclusions and Future Recommendations

This final section will explore the confirmation or validation of the hypothesis proposed. Conclusions will be reviewed, research contributions summarised, and finally any limitations that have affected the study and the direction of future research.

7.1 Conclusions

This research is aimed for testing three propositions that contribute to the literary texts on the relationship between diversification strategy and performance in the UAE's construction industry. The study uses 5 contracting firms all engaged in diversification and have similar portfolio basis. The UAE's construction environment is very competitive and in growth phase. It offers contractors the chance to get proprietary positions if the suitable strategy is implemented. Diversification has proved to yield improved performance in construction as indicated by studies such as Luo's (2001), Chen (1998) and Wang (2001).

Diversification has proved to be popular among contractors following its success in other industries. The construction industry is unique in forming its strategy process. Forming the corporate strategy has to identify which activities or business units will add value to the firm and creates parenting advantage. This guides the selection of projects to be added to the corporate portfolio and the decision of related or unrelated diversification. Related diversification includes business units that share specific dimensions with the core business such as R&D or resources. Unrelated diversification includes firms that have no commonality with the corporate parent. In

previous research, related diversification has been more productive for firms than unrelated diversification in terms of improved performance and increased power among competitors. However, unrelated diversification also has its positivity among firms; increasing their business scope. There are many benefits and costs to diversification, but each firm should balance its needs against what is less important. The main benefits are synergy creation and asset utilisation, whereas major cost disadvantages lie in administrative difficulty and complexities in coordinating activities. The reasons to diversify are many; however, the most significant are gaining critical mass and spreading overall risk. Performance measurement processes in construction have been heavily criticised in literature because most performance indicators are project based, measuring only the success of one project at a time and ignoring the overall corporate success. Nevertheless, firms are starting to shift this focus or being project oriented towards performance oriented. The balanced scorecard proved to be very successful and firms have been implementing it on a large scale because it encompasses different performance perspectives such as market, internal, financial and innovation. Implementation of KPI is another common approach to performance measurement in construction. However, indicators that are most often used are financial and market based indicators. Almost all studies use more than one perspective to measure performance.

This research investigated the diversification role in construction and its impact on firm performance using 100 survey samples, and 20 interviews from five firms. This study incorporated two research methods; questionnaires and case studies. The primary objective of the interviews was to validate the information to be gained from the survey, ensure that the wordings of the questionnaire was understandable, and to identify any factors affecting this research topic not suggested in the literature

previously which would open doors to future research. The overall objective is to reveal evidence on the diversification-performance relationship. The measures of performance used here is a combination of financial and resource based perspectives. The diversification measures used include three categories: Type (related or unrelated); Level (high or moderate); and relatedness (strategic or operational). The diversification measures used are general derived from company reporting. Although these measures of diversification are imperfect metrics, it's improbable they will feed systematic bias into the investigation. The diversification-performance connection has been a topic on intensive analysis in strategic management for the past 35 years. Despite that, no accepted conclusion has been established yet. Literature suggests some negative relations lie between related diversification and performance, and that unrelated diversification has more positive effect, whereas others indicate the opposite.

After conducting the surveys and interviews along with case studies of 5 contractors established and operating in the UAE, the following conclusion points can be drawn:

1. The UAE construction firms are increasingly moving towards convergence as they share similar business models. Many are choosing diversification as a strategic direction to increase competitiveness. Whether the consequence is successful or not, many firms have high diversity.
2. The construction sector is very cyclical which increases pressure on firms to improve processes constantly. It is believed that because the UAE is in the growth phase, these cyclical demands will eventually stable.
3. The corporate strategies used are ignored every time and improved one emerges. This improvement process becomes known as hypercompetitive development (Chandler, 1962). This allows for new rules and standards to be

set continuously. The defence plan that can be used is offensive strategy where the firms have to become first movers to set new standards and be increasingly innovative.

4. The construction industry is particularly rigid as a result of the complicated connections that lie between various aspects within the sector. For example, contractors have to work jointly with government authorities to find new policy methods, negotiate requirements and establish standards. These interrelations among various authorities can make it difficult to influence the route of events. If firms do not take action jointly, they may become locked in a certain structure.
5. It is difficult to benchmark performance because firms implement different performance indicators that focus on different aspects depending on its importance. Some firms implement a mixture of accounting based and market based methods, but their focus is more on the financial status of the firm, with minimum regard to employees, productivity, clients and suppliers.
6. Related diversification is more common among small and medium sized contractors. This is because their main goal is not to increase business scope, but rather, create synergy.
7. Corporate directors suggest that diversification amplifies firm value since it contributes to the advancement of the risk-return profile. In highly diversified firms, risk is high and returns are high as well. However, management should be careful with decisions made to make sure that the balance between the two is always stable.

8. Coordination at the resource level is more beneficial than the activity level because it costs less and no technology is required. Coordinating employees by rotating them among units is the least costly and results can be seen soon.
9. Leveraging capabilities to take advantage of new opportunities should be a continuous process. As learning is created, the firm would find it easier to engage capabilities in different activities simultaneously.
10. Create core competences from diversification. Examples are the learning and collective knowledge in the firm, coordination of operations and multiple technologies. This creates more value and harmonisation among both production processes and employees. As a result revenue per employee will increase, thus adding to the annual earnings.
11. This research does not necessarily imply that unrelated diversification is bad; it just requires heavy investment in terms of capital and administrative skills.
12. Vertical integration is the foundation of diversification strategy. Full integration, although enables more control, can be too costly and risky for the firm. Taper integration is a better choice, with more contractors implementing it. All the benefits of full integration are captured but the risks are spread out more.
13. The diversification performance relationship is non linear as suggested in studies by Chatterjee and Wernerfelt (1991), and Palich et al (2000). Instead, as this research indicates, moderate levels of diversification are optimal for improving performance. Therefore, the curvilinear or inverted – U relationship between related diversification and performance is true. High performance levels decrease performance and low levels do not have any impact either.

7.2 Confirmation of Hypothesis

Reflecting back on the research problem which consisted of finding the connection between diversification and performance through testing three hypotheses that were constructed from the literature review, the following results emerged. In the first hypothesis, a widespread proposition implies that related diversification impacts corporate performance was tested by running a Pearson's coefficient correlation test. This proposition was previously tested by Palich (2000), Berger and Ofek (1995) and Datta et al (1991) just to name a few. The test was run to validate related diversification and increased performance. The same test was run on unrelated diversification and performance for comparison reasons. The second hypothesis looked at the optimal level of diversification for maximum performance. A general data analysis was compiled to review the responses. Results indicated that moderate diversification level is the best choice to increase overall performance. The third hypothesis, comparing strategic and operational relatedness and which one increases performance was conducted. Results showed that both strategic and operational relatedness had their impact on performance but on different perspectives. The hypothesis stated were all proved correct except for the third hypothesis which showed relative importance to the strategic variable as well.

1. Related diversification is significantly associated with financial performance indicators, employee productivity and client satisfaction. Unrelated diversification is negatively linked to financial performance. However very low connections exist between unrelated diversification and employee productivity. On the other hand, client satisfaction is largely positively impacted by unrelated diversification.

2. Moderate levels of diversification have proved to be more affective in improving performance than high or low diversification levels.
3. Operational relatedness is as important as strategic relatedness in affecting performance levels. Operational relatedness showed improved performance in terms of generated revenue per employee and client satisfaction, whereas, strategic relatedness showed improvement financial performance.

In conclusion, the literature review that indicates the stated hypothesis is correct. Hypothesis 3, although partially true, assumed that strategic relatedness is also an important determinant of firm performance.

7.3 Recommendations

To gain the most benefit from diversification strategies, the corporate interviewees recommend the following to be implemented

1. More integration at the business level, not only the corporate level is required. Firms should integrate their offerings so that they are bundled together. This would enable the firm to integrate the activities of units as well as decrease costs and create value to both the customer and firm.
2. Formal risk assessments should be conducted in addition to the performance measurement procedures. Examples include combining sensitivity analysis with the balanced scorecard. The advantage of risk assessments as essential tools is that it gives managers a clearer picture of any strategic consequence.
3. Contractors are advised to identify where their most immense profit pools lie and focus on improving those units responsible for them. Not all diversifiers are profitable, and shifting important resources where they will be least valued is costly.

4. Diversification will be unable to thrive if collaboration at a high level did not take place. All diversifiers, no matter how important they are, as long as they are part of the corporate portfolio, they should be engaged in collaboration of technology, R&D, resources, skills logistic channels and knowledge sharing.
5. It is vital that the contractor acts as a strategic centre where strategy conception and implementation can be distributed and shared with other partners. It should be an integral part that strategic centres communicate concepts and resolve any paradoxes as sharing resources creates more clashes between departments.
6. Contractors are urged to create for themselves strategic lock- in so that a proprietary position is achieved for them in the industry. This will make the management of diversifier's easier and less complex. Corporate executives suggest that achieving strategic lock- in can achieved be by identifying oneself as a first mover especially in growing markets.
7. More synergy creation in diversification can be created by combining three CSF simultaneously. The first is to increase production in order for per unit price to decrease. The second is to deploy the exact resources for conducting several operations at one time. Third, to look for undervalued assets, and exploit any opportunities that exist in them which can add to the firm value and business operations.
8. Dominant logic, which is a frequent view of looking at strategy across various businesses, enables the core business to analyse business requirements and situations separately from the main enterprise. What might look logical in one business unit might not be the case in another, especially if both businesses were from different industries.

9. It is highly recommended in literature that the same vertical integration approach is not used among all diversifiers. This is to help decrease risk and help a firm and reduce costs. Full integration is highly beneficial for construction firms as it allows them to better control the availability and quality of their raw materials, but at the same time can be very costly, needs specialised equipment and machinery and is highly risky in terms of excess supply. Taper integration, where contractors can own their backward chain, still enables them to distribute some of their production to other suppliers, whereas in full integration that is not possible. It is recommended in studies by Wang (2001) and Chang and Choi (1988), that it is more advantageous for the contractor to focus on his core business and allow the supply issues to be handled by a third party. The benefit of contracting is that it can be short and long term and contractors do not have to be committed to one supplier.
10. The method of pursuing diversification can add substantial benefits to the strategy. Consortia, a type of alliance, is a method highly used in manufacturing industries that involve a particular project (Chang and Choi, 1988). Its application in construction has proved beneficial as well although not widely implemented. It involves two firms working jointly on a project that may involve high R&D costs, special equipment that can be too expensive for one firm to use for one project or people with specific expertise. The consortia method does not coordinate management between the firms and each can have their own resources. There will be only certain processes or resources that will be shared. Consortia is not a form of joint venture if the firms choose it not to be. Consortia can simply involve sharing.

7.4 Research Limitations and Future Directions

The correlation analysis is limited in that the complete sets of performance variables were not tested. More performance factors to be tested would have produced precise results. This research included performance factors from three perspectives; however, they were not sufficient enough to produce a clear picture of the performance level. Future researches should include the balanced scorecard when comparing diversification and performance because that will provide a view of the performance levels from all aspects. In addition, the sample size of 100 respondents may be criticised by future researchers as not being sufficient to establish valid and reliable conclusions. This in particular applies to connections between the related diversification and performance variables. Also, one may have doubt about the validity of the hypothesis as there are only limited numbers of studies that support it. However, it is important to note that there does not exist a final established conclusion on this topic, and researchers are coming up with different results depending on the performance variables used, the size of the sample considered, and the relatedness dimensions explored. Empirical analysis on the degree of diversification is very limited, and in this research, the level of diversification is measured objectively with questionnaires and archival data. Interviewee's perceptions have been included, adding to the objectivity of this analysis. Another important limitation is that the time period of this research is not the same as the other researches. The majority of the previous studies are 20 or 30 years older. This affects the results of the research as the industries have dramatically changed over the past years. Although SR is a simple calculation of diversification, the entropy measure (Palich et al, 2000) is more widely used in other studies. However, the entropy measure requires complex calculations and limited time is available to this research. In the future, other studies can validate

the results obtained in this research by using multiple measure of diversification. The connection between diversification and firm performance per se are examined in this study. The differences in performance caused by related and unrelated diversification are not addressed which be a step further in future research. Further studies can look at which method of pursuing related diversification produces better results; mergers, acquisitions or alliances. Finally, this research is limited as it is based on the UAE's construction industry, and specifically the contractors. The construction industry is large and how diversification impacts performance is different in contactors, engineering firms, consultants and suppliers.

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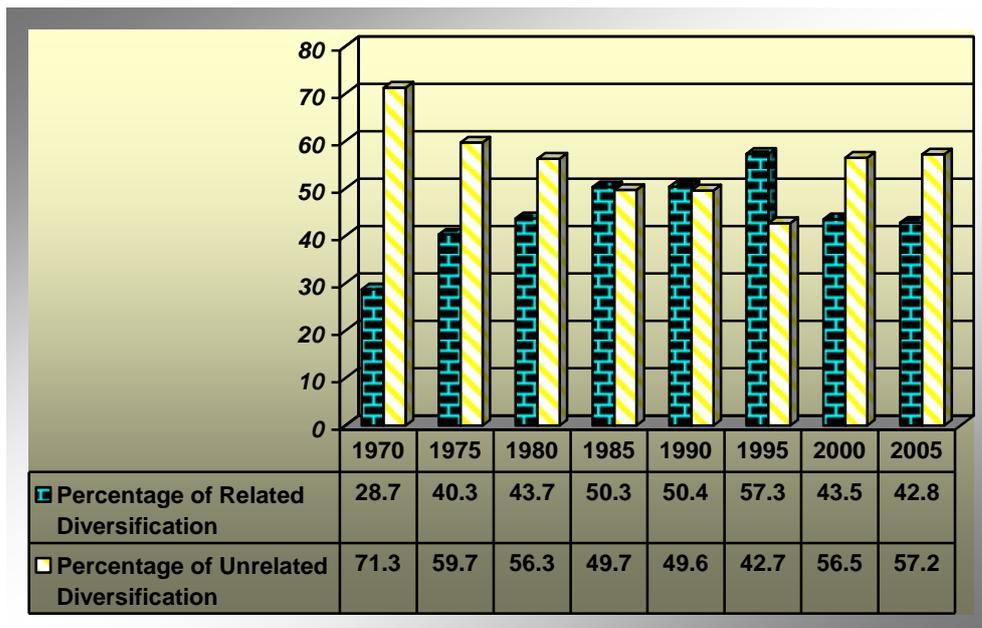
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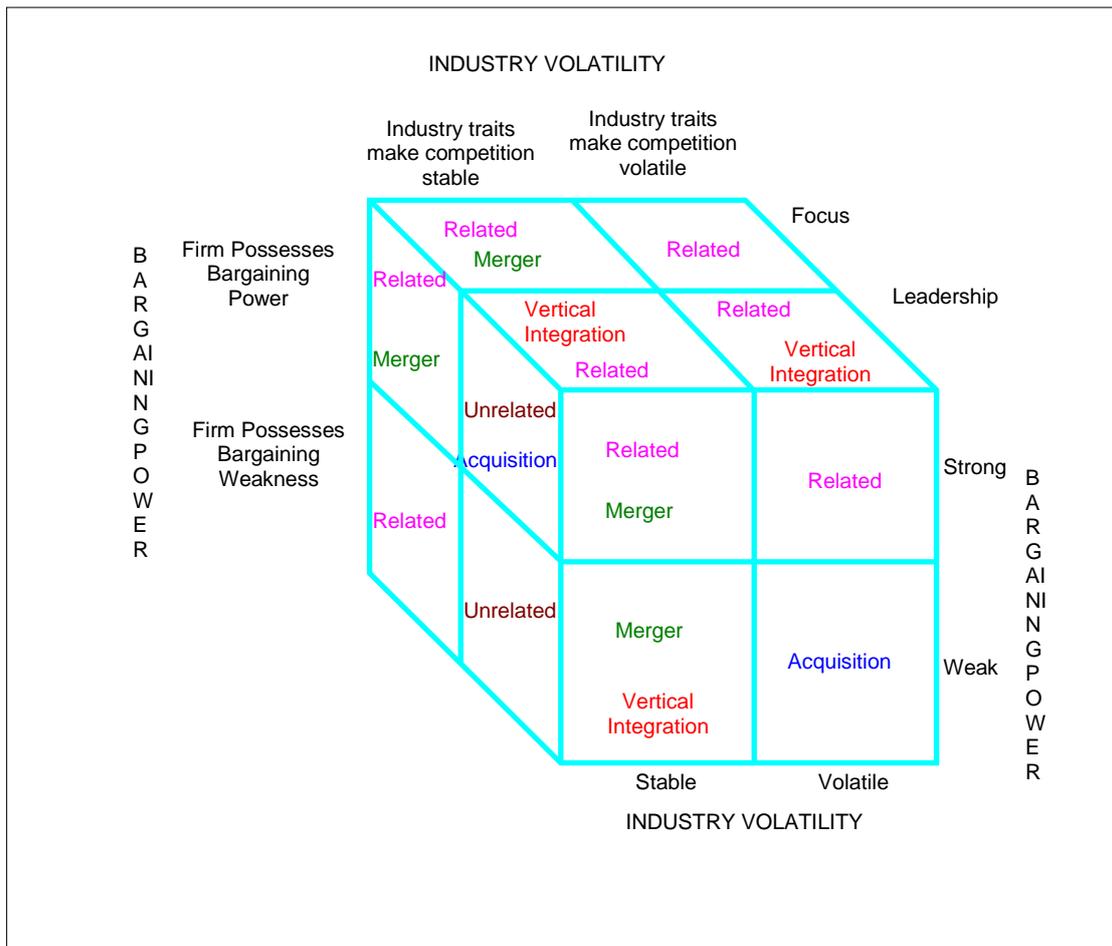
Appendices



Appendix 1: Type of Diversification pursued in Chinese Construction Firms over the years 1970-2005
 “Low and Jiang, 2003”

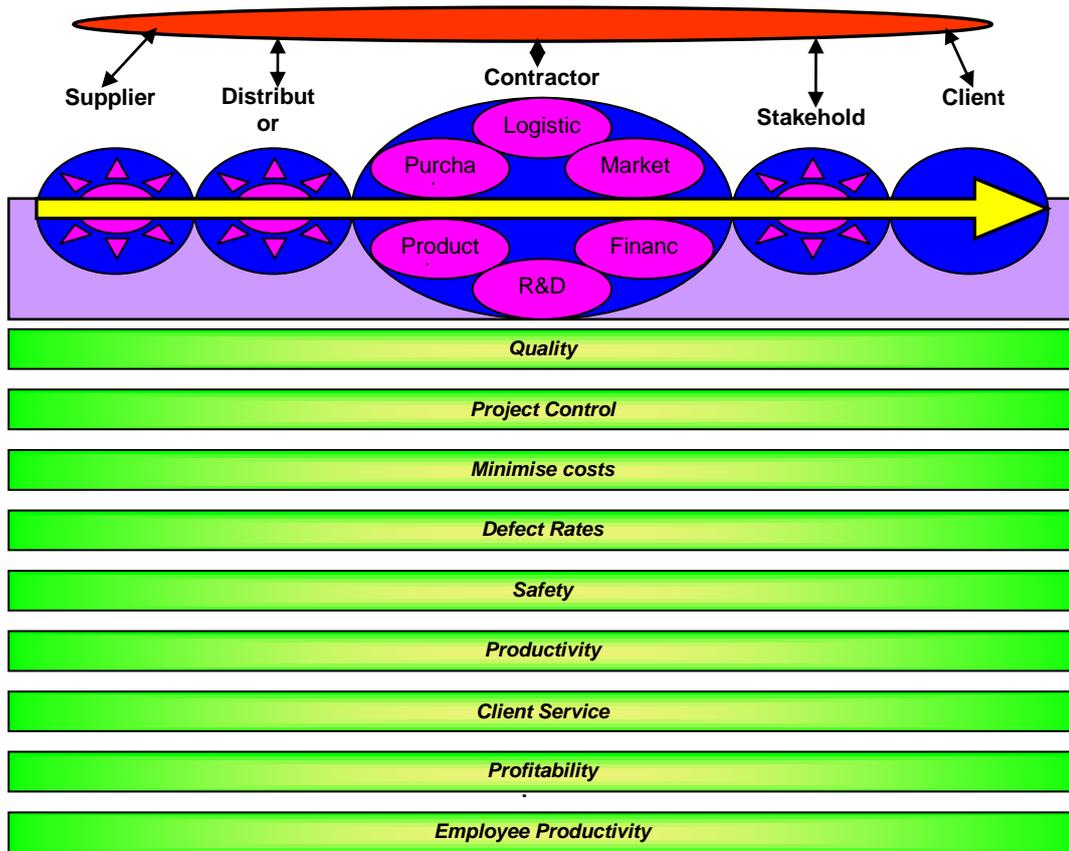
Although related diversification has increased during the years, it has dramatically decreased at the beginning of the millennium. Unrelated diversification is still more common among Chinese construction firms for the following reasons:

- China is a rapidly growing economy and diversifying in many businesses is supported by government incentives
- All industries in China, including construction are booming making them attractive to investors
- Unrelated diversification reduces risks



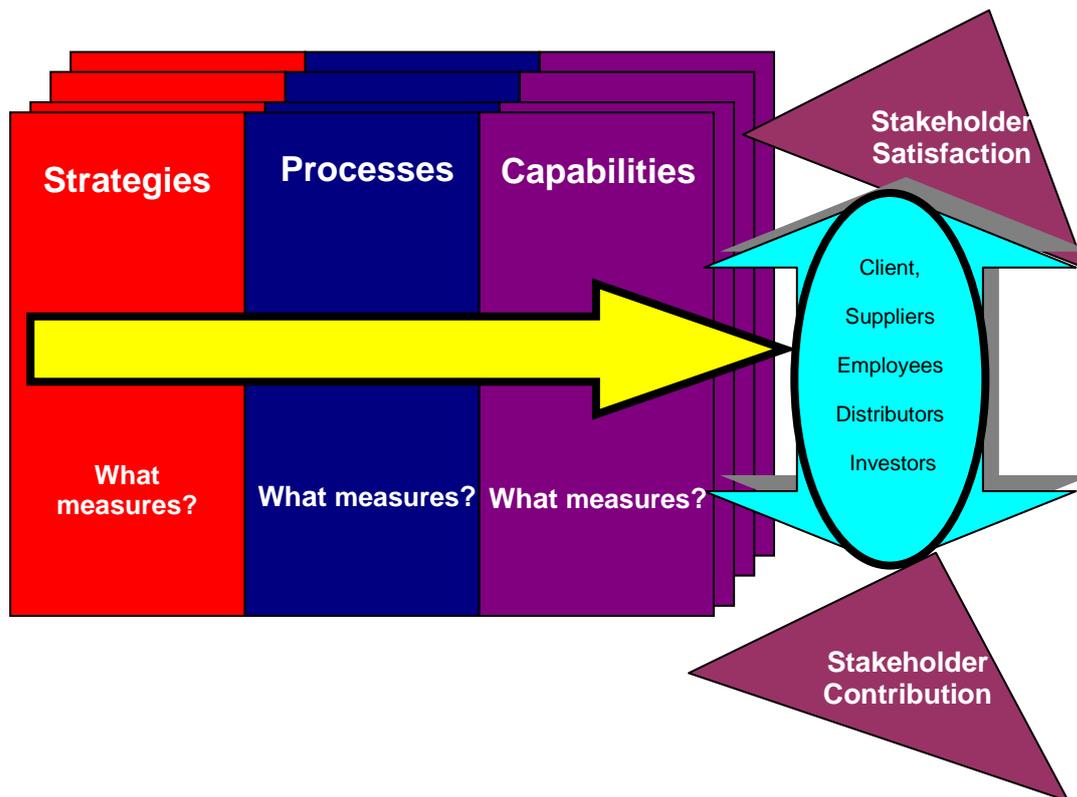
Appendix 2: Strategic Options “Chen, 1998”

Not any strategic option is suitable for every environment and business structure. The choice of strategic option depends on factors such as bargaining power held by the firm, intensity of the industry and type of diversification pursued by the firm.



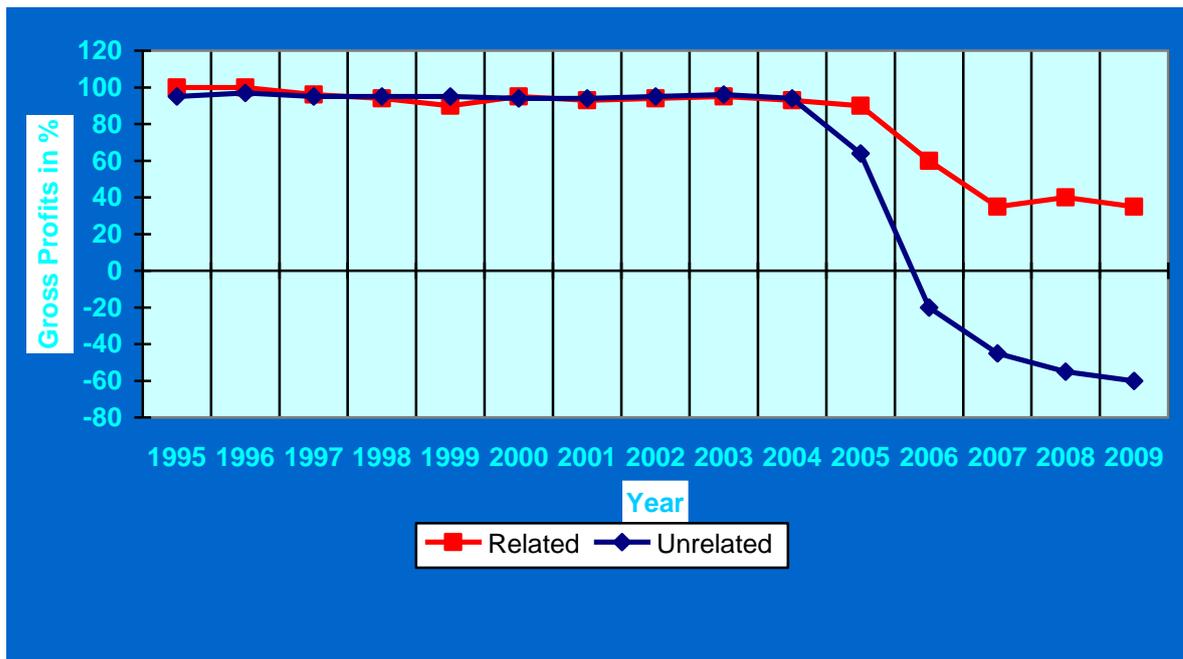
Appendix 3: Performance Measurement Indicators of WTC

WTC insures that its performance measurement indicators are including all partners in the supply chain. The performance indicators are applied all through out the processes right after the project is handed over to the client. The performance measurement system includes financial, quality, client, employee and costs variables.



Appendix 4: Performance Measurement System of MCC

The performance measurement process implemented at MCC includes continuous identification of measures at the strategic level and operational level. Employee capabilities are always improved upon by challenging previous skills. The aim is to satisfy all stakeholders involved in the process as well ensure everyone's is participating to achieve that goal.



Appendix 5: Financial Performance of a Related Diversified Firm and Unrelated Diversified Firm between years 1995 – 2009
 “Palich et al, 2000”

This chart illustrates the performance levels of two firms operating during the period 1995 and 2009. Both are construction firms; however one is engaged in related diversification, while the other is operating in unrelated diversification. Until 2004, both firms were performing similarly, but as the global economic crisis intensified, the firm engaged in unrelated diversification performance standard dramatically decreased more than the related diversifiers.

March 1st 2010

Dear Construction Director / Executive

I understand that you may have already taken part in a survey conducted on strategic mergers. Nevertheless, this survey is a furthermore appraisal of the strategic diversification applications within the construction sector and its relationships to organisational performance. The knowledge you will contribute will in no doubt be practical in aiding the construction sector identify the right diversification strategy which will help increase organisational performance in construction.

Please take a while to finish the included questionnaire. There are no right or wrong answers, only much-wanted answers. A limited number of studies have been conducted on diversification impact on performance in the construction industry. This dissertation will produce knowledge and vital information to the industry and your organisation. Responses will remain confidential. Once the questionnaire survey procedure is concluded; the outcome will be made available for you. Please have your survey returned by April 1, 2010 either by e-mail fax or will be collected by our representative.

Your assistance is highly appreciated. Your response is essential for the success of this study, the construction industry and our organisations.

For further issues regarding this research, please do not hesitate to contact me, Nehal Al Sayegh at umroda@live.com or alternately by fax at +9714 3449464.

Sincerely,

Nehal Al Sayegh

Diversification-Performance Relationship in the Construction Industry

Please take your time in providing me with the information which will be vitally important in realizing the real relationship between diversification and organisational performance.

This questionnaire is composed of three parts. Please complete all sections.

Part 1: Background Information.

A. How many years have you been in your current organisation?

- 1) Less than a year
- 2) 1 – 10
- 3) 11 – 21
- 4) 21 years or more

B. What is your education level?

- 1) None
- 2) Bachelor
- 3) Master
- 4) PhD

C. How many years do you have experience the construction industry?

- 1) 5 – 9 years
- 2) 10 – 14
- 3) 15 – 19
- 4) 20 years or more

D. How many years experience do you have at an executive level in construction?

- 1) Less than one year
- 2) 1 – 5
- 3) 6 – 10
- 4) 11 years or more

Part 2: Diversification Information.

This part of the questionnaire is about the diversification strategy of your organisation. Please choose one opinion that best describes your thoughts about the statement.

No.	Statement	Strongly Agree	Agree	Unsure	Disagree	Strongly Agree
1	My organisation's engaged in other businesses related to construction					
2	My organisation's engaged in more than one business line					
3	The diversified business lines are related to the organisational strategy					
4	All diverse business lines are equally important to the firm					
5	Diversification increases risk					
6	The businesses that my organisation is diversified in are unrelated to construction					
7	Diversification reduces risk					
8	There is added pressure on organisational resources because of diversification					
9	My organisation is engaged in both related and unrelated businesses to construction					
10	Diversification requires special capabilities and competences					
11	Unrelated business lines increases business scope					

No.	Statement	Strongly Agree	Agree	Unsure	Disagree	Strongly Agree
12	Organisational success is partly defined by the number of businesses the firm operates in					

13	Related diversification is a long term strategy					
14	Related businesses generate the most income to the parent organisation					
15	Unrelated businesses add pressure to the firm					
16	Related diversification extends the life of an organisation					
17	Unrelated diversification increases the business scope of the firm					
18	The consequences of diversification are the same whether related or unrelated					
19	Related diversification results in improved knowledge and skill transfer					
20	Unrelated diversification offers more learning opportunities					
21	Unrelated diversification is a short term strategy					
22	My organisation is continuously looking for new opportunities to diversify in					
23	Unrelated diversification is a source of competitive advantage to the firm					

No.	Statement	Strongly Agree	Agree	Unsure	Disagree	Strongly Agree
24	Benefits of related diversification outweigh its costs					
25	Related diversification creates cost effectiveness in supply chain					

26	Diversification strategy is recommended in a competitive environment such as construction					
27	Diversifying into unrelated business cause conflict among the management team					
28	It is possible for construction firms to function competitively without undergoing diversification strategy					
29	Unrelated diversification involves incurring extra costs to the parent firm					
30	Related diversification brings financial and economic benefits faster than unrelated diversification					

Part 3: Types of Diversification

This part is about your organisation implementation of diversification strategy.

No.	Statement	Strongly Agree	Agree	Unsure	Disagree	Strongly Agree
1	In my organisation 10% of yearly earnings come from diversifiers					
2	We constantly look for new ventures to add to our					

	portfolio, whether related or unrelated					
3	One of our long term strategic goals state increasing our portfolio's offering					
4	Less than 50% of our total yearly organisational profit comes from our main business					
5	One of the goals in my firm is to increase market share of the organisation					
6	The diversified business increase each year i.e. the same diversifier grows bigger					
7	The profits we make get injected back into the diversified line(s)					
8	Diversifiers are on some occasions merged together to increase power or share resources					
9	Diversified business units have their own mission, vision and long term strategy					

No.	Statement	Strongly Agree	Agree	Unsure	Disagree	Strongly Agree
10	The industry encourages diversification because it favours firms with a bigger portfolio					
11	The diversifier is continuously growing as long as employees learn from it					
12	The diversifier is not measured by financial indicators alone. Marked based measures and					

	customer satisfaction are considered as well					
13	In my organisation, 40% of projects conducted by the new diversifiers					
14	The life line of a diversified business is less than 5 years					
15	Related diversification has more impact on our corporate strategy because its performance is directly linked to us					
16	Unrelated diversification shows us more effect on performance in the short term only					
17	Related diversification is given more weights in performance					
18	Unrelated diversification is not increasing the value of the organizing i.e. it is not adding value to the daily activities					

No.	Statement	Strongly Agree	Agree	Unsure	Disagree	Strongly Agree
19	Related diversification can be a better choice to fill in the strategic gap than unrelated diversification					
20	Our related diversification areas are considered to be a main competitive advantage					
21	Unrelated diversification is considered to be a long term investment opportunity					
22	Related diversification helps us meet the needs of our					

	stakeholder expectations to increase firm growth and reputation					
23	Related diversification helps us explicit R&D opportunities for experience and learning					
24	Related diversification can have a high risk of being abandoned by the firm if performance levels were low for two executive periods					
25	Related diversifiers have other business units dependent on it					
26	Related diversification has been involved in our corporate strategy for at least 10 years					
27	Unrelated diversification has been involved in our organisation for the past 10 years					

No.	Statement	Strongly Agree	Agree	Unsure	Disagree	Strongly Agree
28	Unrelated diversification can be dynamic and results / performance not always the same					
29	Related diversification can be more stable to the firm i.e. less demand fluctuations and smooth business processes					
30	Overall, diversification strategies are considered “the blood of the organisation”, i.e. they are a vital component of the corporate strategy					

Part 4: Performance Factors

This part measures the performance measurement system of your organisation. Please indicate your best opinion of each statement.

No.	Statement	Strongly Agree	Agree	Unsure	Disagree	Strongly Agree
1	In my organisation, performance is determined by the financial status alone					
2	Excellent performance includes supply chain effectiveness and efficiency					
3	Benchmarking is an effective method to determine organisational performance					
4	Unrelated diversification improves short term performance					

5	My organisation implements The Balanced Scorecard as a performance measurement tool					
6	The scorecard links the firms long term strategy to it's short term actions					
7	All the following perspectives constitute the measurement system in my organisation: financial, customer, internal and innovation and learning					
8	All stakeholders have to be involved in the performance measurement system					

No.	Statement	Strongly Agree	Agree	Unsure	Disagree	Strongly Agree
9	Performance is measured twice per year					
10	Organisational performance increases as the number of business lines increase					
11	Organisational performance depends on the industry structure and not our capabilities					
12	One of the reasons why performance measurement is important in my organisation is that it helps identify gaps for improvement					
13	Performance measurement includes measurement of each business line and not the organisation as a whole					
14	The performance measurement system uses team accountability instead of individual responsibility					

15	Performance reviews are conducted periodically to aid in improving strategy					
16	Employee attitudes and core competences are integrated into the measurement system					
17	Organisational performance is not affected by any diversification strategy					
18	My organisation adds new measurement metrics for each line of business					

No.	Statement	Strongly Agree	Agree	Unsure	Disagree	Strongly Agree
19	Our performance measurement system includes continuous feedback and learning					
20	We conduct quarterly reviews throughout all the business lines					
21	Performance measurement is conducted for each functional department rather than the organisation as a whole					
22	Unrelated diversification improves corporate performance					
23	KPIs are main performance measurement tools used in my organisation to determine the level of success at every level					
24	Accounting based performance is more applicable than market based performance in construction					
25	Firm performance has increased over the past 5 years					

26	Excellent performance levels in related businesses are dependent on the availability of resources.					
27	My organisation depends on cash inflows more from it's unrelated businesses					

No.	Statement	Strongly Agree	Agree	Unsure	Disagree	Strongly Agree
28	In my firm performance measurement systems measure intangibles such as innovation, creativity and learning					
29	The performance measurement system includes benchmarking					
30	Related diversification increases short term performance					

Thank you for your time. The feedback will be reported to you.

Appendix 6: Questionnaire