Achieving High Organisational Performance: An Examination of the Importance of Formulation-Implementation Balance, Receptive Culture and Proactive Capabilities

by

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Table of Contents

List of Figures

List of Tables

Abstract

The study is concerned with why some organisations, when dealing with their dynamic external environmental conditions, can achieve high organisational performance, while many others failed to cope. The literature review emphasised the formulation-implementation balance rather than strategy formulation as an important organisational dimension. This dimension has been relatively neglected compared to the emphasis research and organisations have placed on strategy formulation. The literature review also emphasised a receptive culture and proactive capabilities as important organisational dimensions in the pursuit of high organisational performance. The study defined receptive culture to include the organisational factors autonomous orientation and improvement orientation. The study also defined proactive capabilities to include the organisational factors adaptive capability, innovative capability and external intelligence capability.

A research model of factors associated with high organisational performance was developed and research hypotheses were advanced with particular emphasis on the importance of the formulation-implementation balance, receptive culture and proactive capabilities. Structural Equation Modelling was used. The research targeted organisations based in Singapore.

The study found that a receptive culture, as a particular type of organisational culture, has an important strategic implementation role for high organisational performance. The results showed that autonomous orientation in isolation might not be useful to an organisation, but would help an organisation to perform when working in combination with improvement orientation, adaptive capability or innovative capability. The results also showed that organisations would stand a better chance of achieving organisational high performance when improvement orientation is nurtured.

The study also found that proactive capabilities, as a particular set of dynamic capabilities, have an important strategic implementation role for high organisational performance. The results showed that the chance of achieving high organisational performance improves with the employment of adaptive capability. The research found that employing innovative capability in isolation did not affect organisational performance, but innovative capability would help an organisation to perform when

used in combination with adaptive capability. The results further showed that the employment of external intelligence capability would need to be coupled with improvement orientation, adaptive capability or innovative capability in order for it to be useful to organisations. However, the study did not support the importance of formulation-implementation balance for high organisational performance.

Overall, the study demonstrated that organisational performance can be explained by the type of organisational culture and capabilities on which managers place emphasis. For achieving high organisational performance, organizations need to place an emphasis on nurturing a receptive culture in order to manage a state of readiness that helps them in coping with their changing external environment. Organisations need to emphasise the development of proactive capabilities in order to be adaptive, innovative and to continuously monitor and interpret prospective change-patterns in the external environment.

Declaration

This work contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution to Hock-Tee Koh and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text.

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Hock-Tee Koh

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'I can do everything through him who gives me strength' Philippians 4:13

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Chapter 1 – Introduction

Research in the field of strategy has provided many answers to explain the performance of organisations (Shapiro, 1989; Porter, 1991; Barney & Zajac, 1994). One widely recognised contribution has been provided by Porter (1985), who argues that understanding how organisations position themselves within their industry and changing environment is important. Porter (1996) further argues that organisations need to deliberately choose a set of activities to create a unique and valuable position in the marketplace in order to attain good performance. Another widely recognised contribution has been provided by Barney (1991), who argues that knowing how to employ and exploit resources such that the outcomes cannot be imitated by competitors, enables organisations to create competitive advantages in order to derive good performance.

Organisations nowadays are challenged by a world of transforming and globalising economies, accelerating technological advancement, innovative competitor movements and reactions, and demanding and fluctuating customer needs. The external environment today is constantly changing and is unpredictable (Ireland & Hitt, 2005). Organisations need to be able to respond to their dynamic environmental conditions in order to attain high organisational performance (Eisenhardt & Sull, 2001; Christensen, Raynor & Anthony, 2003; Ireland & Hitt, 2005; Helfat, Finkelstein, Mitchell, Peteraf, Singh, Teece & Winter, 2007). However, many organisations recognise that responding to today's external environments cannot be done simply. They also are unsure about what can or should be done. Moreover, some researchers have found that organisations are unable to perform when they do not make sense of information concerning their external environment (Peters & Waterman, 1982; Ancona & Caldwell, 1992; Kumar, Subramanian & Strandholm, 2001). A number of researchers have devoted their time to expanding existing theories and developing new ones that can better grapple with the reality of current environmental conditions faced by organisations (Teece, Pisano & Shuen, 1997; Christensen, Suarez & Utterback, 1998; Kim & Mauborgne, 2004; Helfat et al., 2007; Phelps, Adams & Bessant, 2007).

1.1 Research Background

Many of the findings from the field of strategy research focus on understanding how strategy formulated by organisations relates to organisational performance (Barney, 1991; Porter, 1991; Ireland & Hitt, 2005). Put differently, strategy research has provided much that is insightful for strategy formulation. However, there has been much less research into strategy implementation because there is a lack of clear models on which to build on (Noble, 1999; Okumus, 2003). This is a critical gap because merely having a formulated strategy may not suffice for an organisation to achieve high organizational performance in dynamic external conditions. It is unlikely that a well-formulated strategy can realise much of value by simply implementing it, without also having regard for contingent consequences.

Strategy formulation entails a process of evaluating ever-changing market and competitive structures and conditions, ascertaining plausible business opportunities and threats created by these shifting environmental conditions, matching the external conditions with the organisation's continuously evolving resources and capabilities, and determining an intentional course of actions to achieve the desired strategic outcomes (Hill & Jones, 2001; Hubbard, 2004; Hitt, Ireland & Hoskisson, 2005). A strategic plan is usually produced as an outcome which typically captures the strategic intentions, assumptions, decisions, commitments and actions required of an organisation to achieve strategic competitiveness and high organisational performance (Hitt, Ireland & Hoskisson, 2005).

Strategy implementation involves an iterative work of taking actions, reconciling and adapting organisational dimensions to a strategy, experimenting with ways to effectively execute the strategy and managing strategy to fit the environment, which then leads to increased performance (Noble, 1999; Varadarajan, 1999; Hubbard, Samuel, Heap & Cocks, 2002; Homburg, Krohmer & Workman Jr, 2004). As such, through strategy implementation, organisations are in direct interface with their external environments. Strategy implementation places organisations in a more outright engagement on a real-time basis, with their volatile external environment (Noble, 1999; Varadarajan, 1999; Hubbard et al., 2002; Homburg, Krohmer & Workman Jr, 2004). Customers may react adversely in an unexpected manner and competitors may respond in unanticipated ways (Fuld, 1994; Kahaner, 1997; Christensen, Raynor & Anthony,

2003). These are some plausible and critical issues for organisations to deal with as part of the process of strategy implementation.

For the study of high performance organisations, scholars have typically focused on organisations which are large in size, and their findings are specifically applicable in the context of one country, namely America and Australia (Peters & Waterman, 1982; Collins & Porras, 1994; Collins, 2001; Hubbard et al., 2002). Peters and Waterman (1982) studied some high performance organisations in America and found that the organisations gave attention to developing such characteristics as action orientation, customer focus, empowerment, entrepreneurship, productivity, value driven, simple structure and flexible decision-making. Collins and Porras (1994) studied some high performance organisations in America and found that the organisations gave attention to developing such characteristics as staying focused on organisational development and progress, seeking clarity in direction, promoting continuous improvement, aiming for stretched goals, fostering a strong culture and grooming own managers.

In a later study also on some high performance organisations in America, Collins and Porras (2001) found that the organisations gave attention to strategically managing the function of such elements as leadership, employees and passion, selected technologies, decision-making process, a strong culture and continuous improvement. Hubbard et al. (2002) studied some high performance organisations in Australia and found that the organizations gave attention to aligning and balancing elements such as effective execution of plans to produce results, flexibility in plans, adaptability, leadership, motivated employees, risks management and an external orientation. The findings from these studies have excited organisations in Singapore because many desired to achieve high performance but found it difficult to do so. Singapore offers an interesting and different context for the study of high organisational phenomenon. Although it is a small island-state in Southeast Asia, it is one of the leading business hubs in Asia. It is classified as a newly industrialised economy with a GDP level similar to developed economies (Lockett & Wright, 2002). Organisations based in Singapore, which is a globally connected, multi-cultural and cosmopolitan island-state, are faced with ever-changing market and competitive structures and conditions. It is perhaps more critical for them, compared to organisations based in larger countries, to able to respond to their dynamic environmental conditions because they do not have a big local market to rely on

like America and Australia. Also, the Singapore government[1] recognises the importance for organizations to achieve high performance and has given many incentives to encourage the growth of dynamic and innovative performance-oriented organisations. It would thus be useful to study the phenomenon of high organisational performance in the Singaporean context. It was not mentioned in the study by Hubbard et al. (2002) what factors of organisational culture impacted on performance. It was also not mentioned whether there were specific organisational capabilities required for achieving high organisational performance. Other studies (e.g. Peters & Waterman, 1982; Collins & Porras, 1994; Collins, 2001) of high performance organisations also did not address this issue. Therefore, in this study, attention is also given to an examination of what factors of organisational culture, and what organisational capabilities, are associated with high organisational performance.

Furthermore, the other studies (e.g. Peters & Waterman, 1982; Collins & Porras, 1994; Collins, 2001) did not given attention to the influence growth, notwithstanding that growth is part of high organisational performance (Nicholls-Nixon, 2005). However, Nicholls-Nixon (2005) points out that many organisations are faced with performance problems when they try to grow quickly. Greiner (1998) argues that organisations that do not grow will be inundated with many of the same management issues and practices over long periods. Stated differently, organisations that do not grow will likely be faced with stagnation or decline in their performances, and subsequently lose out to the competition. Nicholls-Nixon (2005) points out that some organisations are successful in managing high organisational performance over a long period of time. Therefore, it is important to understand how some organisations can effectively do so.

When competing in unpredictable environments, Ireland and Hitt (2005) claim that organisations require elements such as alertness, innovativeness and adaptability in their management approach. These elements are required to achieve high organisational performance, and also to sustain the performance in the longer run (Ireland & Hitt, 2005). Based on the research by Ireland and Hitt (2005), there are some issues which organizations likely need to grapple with in order to derive high organisational performance. One issue pertains to how organisations can be alert to changing patterns in a market space and to anticipate future possibilities (Eisenhardt & Sull, 2001; Helfat

[1] http://www.spring.gov.sg/enterpriseindustry/pages/overview.aspx

et al., 2007). Another issue relates to how organisations can adapt themselves or produce innovative offerings to match changing customer needs in a well-timed manner (Christensen, Raynor & Anthony, 2003; Wang & Ahmed, 2007). Yet another issue organisations will likely need to wrestle with is how they can discern competitor movements and create possible options to respond (Kahaner, 1997; Kumar, Subramanian & Strandholm, 2001; Wang & Ahmed, 2007).

To summarise, there are still more questions requiring answers to explain the difference in performances of organisations. Gaps in strategy research further widen as the dynamism of the external environment heightens. Some organisations are able to achieve high organisational performance while many others fail to cope with their constantly changing and unpredictable environmental conditions. Therefore, research is needed to provide answers in explaining the phenomenon of high organisational performance (Eisenhardt & Sull, 2001; Christensen, Raynor & Anthony, 2003; Ireland & Hitt, 2005). This research tests the association of understudied but important factors as strategy implementation, alertness, innovativeness, adaptability and external intelligence to organisational performance.

1.2 Research Objectives

In view of the above, the overall purpose of this research is to identify and test important dimensions of organisational implementation which enable the achievement of high organisational performance. More specifically, the objectives of this study are as follows:

1. To investigate whether placing emphasis on obtaining a formulation-implementation balance is important for achieving high organisational performance.
2. To examine whether a receptive culture, consisting of autonomous orientation and improvement orientation, is important for achieving high organisational performance.

3. To examine whether proactive capabilities, consisting of adaptive capability, innovative capability and external intelligence capability, are important for achieving high organisational performance.

1.3 Significance of the Study

The study specifically seeks to fill the theoretical gaps relating to the phenomenon of high organisational performance by establishing the role of organisational dimensions formulation-implementation balance, receptive culture and proactive capabilities. The study aims to develop a viable construct of factors for each of the dimensions, through a systematic process of empirical validation and testing using data from organisations based in Singapore. The resultant factors will be integrated into a model framework that will enable the testing of influences which affect high organisational performance.

From a practical perspective, the findings of the study may provide useful guidance to managers in their pursuit of high organisational performance. In particular, the findings may guide managers in discerning the most effective organisational culture required and what aspects of the culture they need to emphasise for achieving high organisational performance. The findings may also guide managers discerning the most effective organisational capabilities are required, and the aspects of those capabilities they need to develop.

1.4 Organisation of Chapters

This thesis is organised into five chapters. Chapter 1 presented the research background and objectives. Three research objectives were outlined. Chapter 2 provides a comprehensive literature review relating to the desirable phenomenon of achieving high organisational performance. In relation to high organisational performance, five bodies of literature were reviewed including organisational performance, strategy implementation, organisational culture, dynamic capabilities and organisational intelligence, and gaps in the existing literatures were discussed. Chapter 2 ends with the presentation of the resultant research questions and model.

Chapter 3 describes the methodology of the study, the sampling frame, the development of measures and the survey instrument, data collection and preparation, and the assessment of the measurement model for the research model. Chapter 4 proceeds with model testing, employing a structural equation modelling (SEM) procedure to estimate the direct and indirect effects of factors in the research model. Chapter 5 concludes the thesis with a discussion of the implications of the findings, a deliberation of the limitations of the study, and suggestions for future research.

Chapter 2 – Review of Literature

The literature review covers five relevant bodies of literature that attempt to describe the organisational dimensions influencing organisational performance. The bodies of literature include organisational performance, strategy implementation, organisational culture, dynamic capabilities and organisational intelligence. This chapter begins with a discussion of organisational performance. It then proceeds with discussions of formulation-implementation balance, receptive culture and proactive capabilities as organisational dimensions, with particular attention on their association with high organisational performance. The literature review on the organisational dimensions will delve into finding their factors and related measures. This chapter ends with a discussion of the resultant research questions and research model.

2.1 Organisational Performance

One core purpose of strategy research is to investigate the improvement of organisational performance (Venkatraman & Ramanujam, 1986; Cameron, Whetten & Kim, 1987; Eisenhardt & Zbaracki, 1992; Carton & Hofer, 2006). Cameron and Whetten (1983) highlight that the importance of organisational performance in strategy research can be argued from three points of view – namely the theoretical, empirical and managerial. Theoretically, most strategy research studies give attention to the implications of organisational performance (Venkatraman & Ramanujam, 1986). Empirically, strategy research studies employ the construct of organisational performance to test a variety of issues about strategy content and process (Ginsberg & Venkatraman, 1985; Venkatraman & Ramanujam, 1986). Managerially, the importance of organisational performance is evident in the many prescriptions offered for performance improvement (Nash, 1983; Venkatraman & Ramanujam, 1986). Clearly, investigation into the improvement of organisational performance ought to be the focal point of strategy research. Therefore, this study will use organisational performance as its dependent variable.

The general understanding of organisational performance is based upon the effective association of productive resources, including human, physical and capital resources, for the purpose of achieving a shared outcome (Simon, 1976; Barney, 2002).

Performance is a measure of the state of an organisation, or the outcomes that result from management decisions and the execution of those decisions by employees of the organisation (Carton & Hofer, 2006). Measurements used to represent performance are selected based upon the circumstances of the organisations being studied (Hofer, 1983). Measures are the 'careful, deliberate, observations of the real world for the purpose of describing objects and events in terms of the attributes composing a variable' (Babbie, 1998:116). Although much attention has been given to examine how successful organisational outcomes should be measured, so far there seems to be no consensus regarding the best measure of organisational performance (Carton & Hofer, 2006).

Many strategy research studies used financial measures to represent organisational performance, especially for studies that discriminate between high and low performing organisations (Venkatraman & Ramanujam, 1986; Carton & Hofer, 2006). In their review of existing performance measures, Carton and Hofer (2006) claim that positive performance in one measure may simultaneously result in negative performance in another measure. They found that the majority of empirical studies of strategy used multiple measures to assess organisational performance (Carton & Hofer, 2006). Therefore, multiple measures will be used to represent organisational performance in this study.

2.1.1 Measures of Organisational Performance

The most common measure used to represent organisational performance is profitability, and the second is growth (Carton & Hofer, 2006). Venkatraman and Ramanujam (1986) found that sales growth, profit growth and profitability were distinct and good measures of organisational performance. Carton and Hofer (2006) claim that organisational growth is a critical measure of organisational performance, and it ought to be included in any analysis of overall organisational performance. The most frequently used measure of growth in empirical studies is sales growth, followed by employee growth (Carton & Hofer, 2006).

Employee growth is considered a proxy measure of growth as it indicates the addition of employees in anticipation of sales growth, and will therefore be redundant if sales growth is already used (Carton & Hofer, 2006). The other possible measures of

growth are operating assets growth and total assets growth, which are considered measures of organisational effectiveness rather than organizational performance, and have not been used much in empirical studies (Carton & Hofer, 2006). The general understanding of organisational effectiveness is based upon the notion of how well an organisation accomplishes its goals and objectives, acquires critical resources, puts in place systems and internal trusts, and satisfies stakeholders (Cameron & Whetten, 1983; Carton & Hofer, 2006).

Compared to the other measures, Carton and Hofer (2006) point out that sales growth has been the primary measure of organisational performance but it needs to be coupled with profit growth to be useful in representing organisational performance in terms of the change in economic value that is sought by organisations. Therefore, sales growth and profit growth are included as measures of organisational performance for this study.

Profit and return on equity are two common measures for profitability (Carton & Hofer, 2006). Return on equity measures the income available to common stockholders as a percentage of the book value of their investment in the organisation. Compared to other measures such as return on assets and return on sales, return on equity is one that provides a relatively large variance (Carton & Hofer, 2006), which is a good measurement property (Chen & Dodd, 1997). In addition to sales growth, profit growth and return on equity measures, sales turnover measure is also found to be one of the commonly considered measure of organisational performance (Murphy, Trailer & Hill, 1996). Therefore, sales turnover and return on equity are also included as measures of organisational performance for this study.

Based on these findings, Figure 2.1 summarises the measures to represent organisational performance – namely sales growth rate, profit growth rate, sales turnover and return on equity. Hubbard et al. (2002) define high performance organisations as those that have gained an above-average performance compared with their industry. Other ways of describing high organisational performance include ‘annual sales growth of twenty percent (or more) over a four-year period’ (Nicholls-Nixon, 2005:77) and double-digit (or more) sales growth rate (Treacy, 2003).

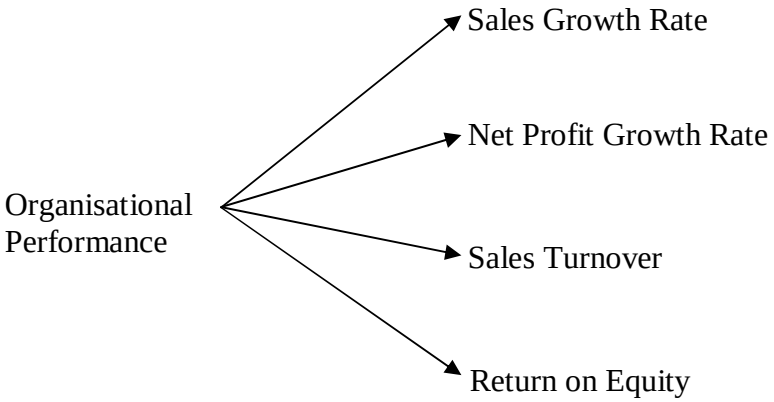

Figure 2.1 Measures of Organizational Performance

Carton and Hofer (2006) found that empirical research studies on strategy most commonly used one-year and three-year timeframes. They highlight that the three-year frame is more common compared to the one-year timeframe. Relative to the one-year timeframe, the information content of the three-year organisational performance measures was considerably higher (Carton & Hofer, 2006). Therefore, a three-year timeframe will be used for this study.

2.2 Formulation-Implementation Balance

2.2.1 The Strategy Implementation Perspective

Strategy implementation is an equally important phase as strategy formulation for a strategy to be successful. Homburg, Krohmer & Workman (2004) argue that strategy implementation is crucial for success as it deals directly with the external environment, operational issues, coordination matters, and involving the whole organisation. Homburg et al. (2004) further argue that strategy formulation does not guarantee successful strategy implementation. It is generally recognised that, right after the strategic plan is produced, its relevance in relation to the changing external environments quickly diminishes with time. Noble (1999:119) claims that 'well-formulated strategies only produce superior performance for the firm when they are successfully implemented.'

In their pursuit of high organisational performance, organisations tend to be more preoccupied with formulating innovative strategy as a response to anticipated external opportunities (Freedman, 2003). They aim to continuously and successfully gain from the external opportunities. Some scholars argue that organisations tend to put in substantial efforts in strategy formulation but neglect strategy implementation (Amburgey & Dacin, 1994; Okumus, 2003; Homburg, Krohmer & Workman Jr, 2004; Mankins & Steele, 2005). One reason for this 'imbalance' of emphasis is that organisations believe that success is in their grasp once a novel strategy is formulated, while implementing the strategy can be done simply and automatically (Freedman, 2003; Okumus, 2003). On the contrary, success will depend largely on effectiveness in quickly adapting critical aspects of the strategy to match evolving environmental conditions (Okumus, 2003). The environmental conditions usually evolve randomly but are integral to having external opportunities take shape fully (Eisenhardt & Sull, 2001). If organisations deal with strategy implementation simply and automatically, they run a risk of not being able to successfully gain from external opportunities when their strategy no longer matches the environmental conditions encountered. So, it is not enough for organisations to merely be apt at formulating novel strategies (Freedman, 2003; Okumus, 2003; Mankins & Steele, 2005).

Given volatile environmental circumstances, it is perhaps more important for organisations to place more emphasis on and be apt at strategy implementation (Freedman, 2003). Strategy scholars have found that many high performance organisations invest significant efforts in their strategy implementation (Peters & Waterman, 1982; Collins & Porras, 1994; Hubbard et al., 2002; Homburg, Krohmer & Workman Jr, 2004). This suggests that low performing organisations may have not paid sufficient attention to their strategy implementation. As environmental conditions shift, there may also be new external opportunities being created, which organisations may tend to overlook (Eisenhardt & Sull, 2001; Christensen, Raynor & Anthony, 2003). Hubbard et al (2002) found that in their study of some high performance organisations, the ability to execute effectively is more important than the strategy formulation.

Mankins and Steele (2005) point out that most organizations do not realise the full potential value of their strategies. Organisations typically fall short by 40% from realising the full potential value of their strategies (Mankins & Steele, 2005). Assuming their formulated strategies are workable, organisations that are able to capture more than

60% of their strategies' potential value are in a better position to achieve high organisational performance (Mankins & Steele, 2005). Some scholars have argued that it is generally important for organisations to formulate and implement many new strategies in order to achieve high performance (Christensen, Raynor & Anthony, 2003; Helfat et al., 2007). However, Miller (2001) points out that organizations typically fail to implement about 70% of their new strategies which are critical for organizational success.

A number of scholars argue that the main reason for the shortfalls in performance is the lack of emphasis given by organisations to strategy implementation efforts (Amburgey & Dacin, 1994; Freedman, 2003; Okumus, 2003; Mankins & Steele, 2005). To overcome the shortfalls in performance, some organisations introduce adjustments and strategic changes to their plan during the course of strategy implementation (Freedman, 2003). However, the difficulties for the organisations lie in determining what to adjust or change and knowing when to do so, and developing the appropriate capabilities for the work. Organisations that are able to perform the necessary changes effectively stand a higher chance of achieving high organisational performance (Freedman, 2003).

Noble (1999) argues that strategy implementation research is fairly fragmented. Okumus (2003:871) points out that there is no 'dominant framework' for strategy implementation. The majority of strategy implementation research was conducted without taking into consideration the strategy content and its environmental context (Barney & Zajac, 1994). Given the hastening changes in most business terrain, a better understanding of the workings of strategy implementation is needed. That understanding ought to be able to inform organisations how unavoidable environmental changes can be operatively taken into account in implementing a strategy. Such insight is critical particularly for organisations to achieve high organisational performance and to sustain it. Okumus (2003:878) highlights that in strategy implementation research, the 'contextual and processual approach has received more support and attention in recent years, since it provides a more comprehensive view for understanding and evaluating complex transformation process.' According to the approach, Okumus (2003) argues that it is important for researchers to take into account in their studies the content, external context and process of implementation and also examine whether their described implementation factors affect each other. Okumus (2003:878) claims that, in

previous frameworks on strategy implementation, many researchers either tend to 'simply list and describe the implementation factors' or 'merely suggest rational step-by-step implementation models', but do not look into the specific role of the factors and how the changing external context can be taken into account in the implementation process. In today's volatile external environmental conditions, as organisations go about implementing their strategy, it is important that they are able to effectively respond to external changes in a timely fashion (Eisenhardt & Martin, 2000; Laurie, Doz & Sheer, 2006; Helfat et al., 2007). Therefore, this study will take on the contextual and processual approach whereby attention will be given to examine the specific role of the described factors and how the changing external context can be taken into account in the process.

Many organisations tend to overlook a good chance to generate valuable business foresights through strategy implementation that can be useful and advantageous for staying ahead of competition (Freedman, 2003; Mankins & Steele, 2005). It becomes more crucial that organisations be able to anticipate marketplace possibilities as they seek opportunities to create organisational changes that can improve their performance (Helfat et al., 2007). Organisations which miss out on these opportunities will probably sustain poor performance if those opportunities are successfully capitalised by competitors instead. Generating business foresights include anticipating ephemeral opportunities and spotting some noteworthy opportunities which others cannot see (Eisenhardt & Sull, 2001; Christensen, Raynor & Anthony, 2003). To do so effectively is certainly not easy, as the conscious and concerted efforts of the whole organisation are generally required (Bartlett & Ghoshal, 1998). Thus, strategy implementation is more than merely executing a strategic plan. It is also about strategically responding to environmental changes on a real-time basis and foreseeing possibilities of fleeting opportunities through proactive engagement with changing business surroundings (Varadarajan, 1999; Hubbard et al., 2002; Homburg, Krohmer & Workman Jr, 2004).

Based on the above discussion, for high performance it is not sufficient for organisations to merely give attention to strategy formulation. They also need to give attention to strategy implementation. 'Organisations need to pay close attention to both strategy formulation and implementation to ensure business success' (Brenes, Mena & Molina, 2008:590). Put differently, formulation-implementation balance is important for organisations in order to achieve high performance.

Hypothesis Development for Formulation-Implementation Balance

In order to achieve high organisational performance, organisations are likely to involve more direct interfaces with their external changing environments, and effect more implementation of new strategies (Eisenhardt & Sull, 2001; Christensen, Raynor & Anthony, 2003). Their success depends on how well they are able to cope and respond to their changing environmental conditions (Noble, 1999; Varadarajan, 1999; Hubbard et al., 2002; Homburg, Krohmer & Workman Jr, 2004). To do so, they need to give attention to both strategy formulation and implementation work in a balanced fashion (Noble, 1999; Homburg, Krohmer & Workman Jr, 2004). Low performance organisations tend to overlook their strategy implementation work (Miller, 2001; Freedman, 2003; Mankins & Steele, 2005). Therefore, formulation-implementation balance is an important dimension for organisations wishing to achieve high organisational performance. This is shown in Figure 2.2 below.

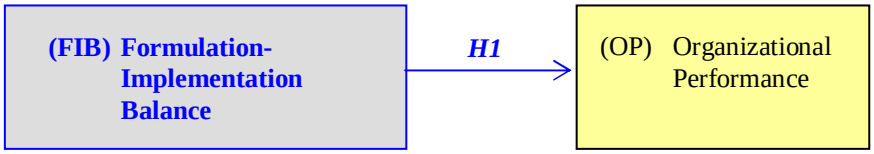

Figure 2.2 Formulation-Implementation Balance for Achieving High Organizational Performance

From the above discussion, the following hypothesis is articulated on the direct effect of formulation-implementation balance on organisational performance:

Hypothesis 1 *A higher level of emphasis on formulation-implementation balance is associated with higher organisational performance.*

Measures of Formulation-Implementation Balance

Organisations that give attention to attaining formulation-implementation balance uphold a ready posture to respond to unpredictable external conditions (Eisenhardt & Sull, 2001; Laurie, Doz & Sheer, 2006), and go about altering their strategy to fit changing external conditions (Freedman, 2003; Okumus, 2003; Mankins & Steele,

2005). They introduce internal changes regularly, take action in an iterative approach and respond to external conditions on a real-time basis (Noble, 1999; Varadarajan, 1999; Hubbard et al., 2002; Homburg, Krohmer & Workman Jr, 2004). They engage their organisational culture to help respond to changing external conditions (Barney, 1992; Kotter & Heskett, 1992; Chan, Shaffer & Snape, 2004). They are effective at capitalising on external opportunities (Amburgey & Dacin, 1994; Freedman, 2003; Okumus, 2003; Mankins & Steele, 2005). They also generate business foresights about future possibilities (Eisenhardt & Sull, 2001; Christensen, Raynor & Anthony, 2003). Based on these findings, Figure 2.3 shows the measures of 'Formulation-Implementation Balance' that lead to high organisational performance. The higher an organisation scores on each of the aspects, the greater is the emphasis placed by the organisation on striking a strategy formulation-implementation balance.

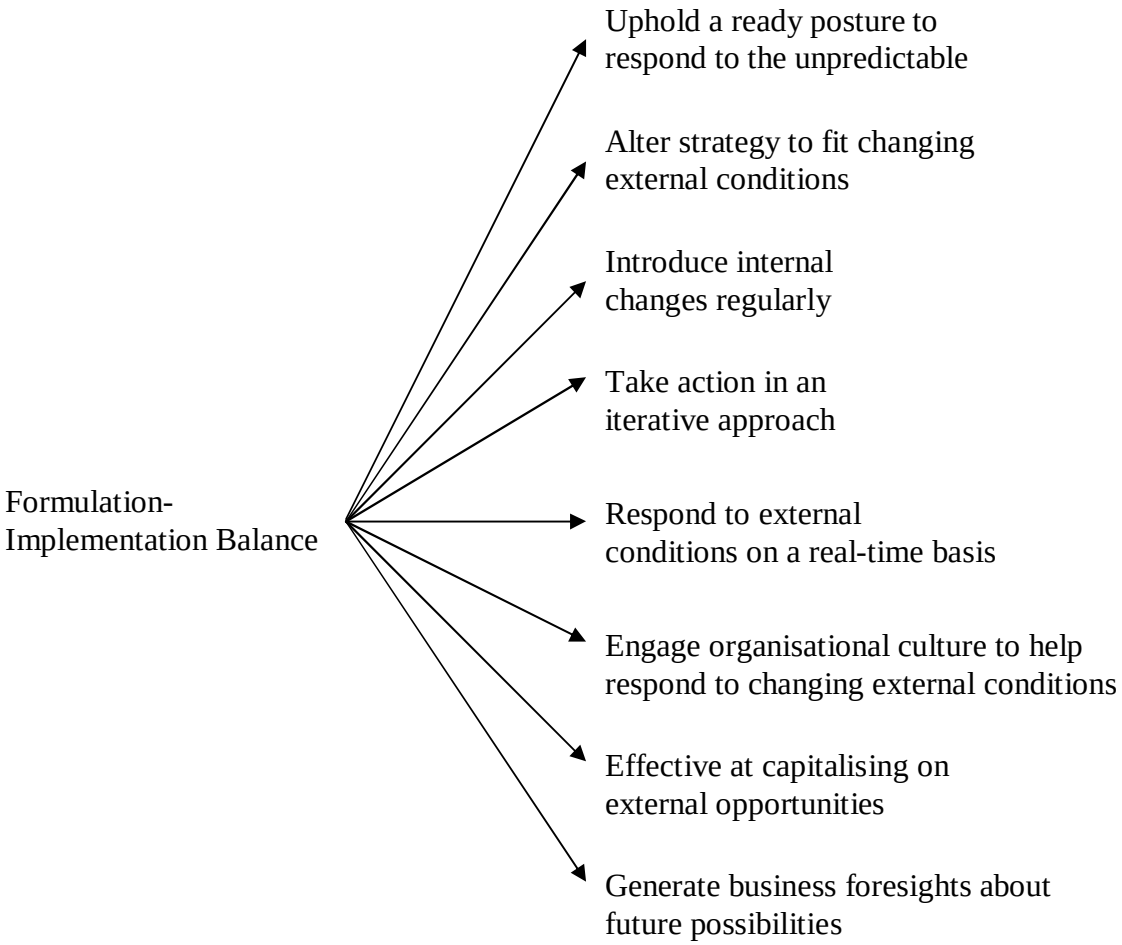

Figure 2.3 Measures of Formulation-Implementation Balance that Lead to High Organisational Performance

2.2.2 Organisational Dimensions in Strategy Implementation

Homburg, Krohmer and Workman (2004) highlight that there has been increased interest in the strategic implementation role of organisational dimensions such as culture, capabilities, leadership approach and skills. Homburg et al. (2004) point out that, at the core of strategy implementation, it is the different types of capabilities, processes, and systems which need to be adjusted in order to derive the desired outcomes. There is a wide spread of perspectives on strategy implementation (Roth, Schweiger & Morrison, 1991; Skivington & Daft, 1991; Hanson, Dowling, Hitt, Ireland & Hoskisson, 2002; Freedman, 2003; Okumus, 2003; De Wit & Meyer, 2004; Hubbard, 2004). They focus primarily on the broad issues of strategic implementation but the majority do not touch on the subject of high organisational performance.

Many strategy implementation models have been developed. In Table 2.1, the organisational dimensions of some strategy implementation models are compared (Peters & Waterman, 1982; Kaplan & Norton, 1996; Hill & Jones, 2001; Hanson et al., 2002; Hubbard et al., 2002; Okumus, 2003; Pearce & Robinson, 2003; De Wit & Meyer, 2004; Hubbard, 2004). These models are selected because they are from major publications in the field of strategy. As major publications tend to summarise important research findings, the selected models are thus good indicators of what is considered important in implementation. Peters and Waterman (1982) studied a group of high performance US organisations. Hubbard, Krohmer and Workman (2002) studied some high performance Australian organizations. Kaplan and Norton (1996) claim that their measurement concept called balanced scorecard helps companies to link long term strategy with short term plans and drive performance.

Okumus (2003) proposed a framework for strategy implementation based on his review of previous strategy implementation research (e.g. Roth, Schweiger & Morrison, 1991; Skivington & Daft, 1991; Freedman, 2003). As for the standard strategic management publications, the respective books by Hill and Jones (2001) and Pearce and Robinson (2003) are published in America, and the content of these publications tend to be biased toward the context of businesses in America. Similarly, the publication by De Wit and Meyer (2004) tends to be biased toward the business context in Europe as it is published in the United Kingdom. The publications by Hanson et al. (2002) and

Hubbard (2004) tend to be biased toward business context in Australia and New Zealand as they are published in Australia.

Table 2.1 A Comparison of Organisational Dimensions in Strategy Implementation Models

	Strategy Implementation Model of Selected Empirical Studies				Strategy Implementation Model of Major Standard Strategic Management Texts				
External Perspective	Peters & Waterman (1982)	Kaplan & Norton (1996)	Hubbard (2002)	Okumus (2003)	Hill & Jones (2001)	Hanson et al. (2002)	Pearce & Robinson (2003)	De Wit & Meyer (2004)	Hubbard (2004)
	Strategy	Business planning	Clear Fuzzy Strategy	Strategy development Operational planning	Strategy	Corporate governance	Short-term objectives & action plans	Strategy	Strategy
			Looking out, looking in	Environmental uncertainty					Environment
	Structure		Manage the downside	Structure	Structure	Structure	Structure	Structure	Structure
Internal Perspective	Style	Translating the vision	Leadership, not leaders	Leadership	Strategic Leadership	Strategic Leadership	Leadership		Leadership
	Staff		Right people	People			Operating personnel	Organizational members	People
	Skills		Effective execution			Entrepreneur-ship & innovation			Capabilities
	Systems	Feedback & learning	Balance everything	Control & outcome	Integrating & control systems	Controls	Control & improvement systems	Processes & systems	Systems
	Shared values		Perfect alignment	Culture	Culture	Culture	Culture	Culture	Culture
		Communicating & linking		Communication					Communication
									Perception

NB. Organisational dimensions are inserted into the table according to their similarity of role and/or purpose.

Table 2.1 suggests that Hubbard's (2004) model of strategic implementation is more comprehensive as it deals with all of the dimensions in the other strategy implementation models, developing it by extending and integrating the Environment-Strategy-Capability analysis model (Hubbard, Pocknee & Taylor, 1996) and the McKinsey 7S framework (Peters & Waterman, 1982). Compared to the other models, Hubbard's model has two other dimensions, namely 'perception' and 'communication'. The dimension 'perception' pertains to whether an organisation can see the issues which it faces so that it is able to address them (Hubbard, 2004). The dimension 'communication' pertains to whether what an organisation is trying to do has been made known to its employees so that the employees can carry out the work (Hubbard, 2004). Since Hubbard's model of strategic implementation is the most comprehensive from Table 2.2, it is used in this study as a basis to discuss and examine a model developed for achieving high organisational performance.

Besides 'perception' and 'communication', the other dimensions in Hubbard's model are 'strategy', 'environment', 'structure', 'leadership', 'people', 'capabilities', 'systems', and 'culture' (Hubbard, 2004). The dimension 'strategy' purports the need for an organisation to formulate an action plan; dimension 'environment' is concerned with the need for an organisation to have an ability to take into account of its external environmental conditions in its plan and execution work; and the 'structure' dimension is concerned with the way work should be organised by an organisation to enhance its strategy. The dimension 'leadership' looks into having a team-based management behaviour that can help an organisation in dealing with changes and charting its future directions; the 'people' dimension is concerned with the hiring and developing of employees that fit its culture and strategy; and the 'systems' dimension relates to the procedures, processes and routines that characterise how work should be effected in an organisation to support its strategy (Hubbard, 2004).

The dimension 'capabilities' pertains to whether an organisation has the necessary abilities to carry out the strategy, including to help shape some dimensions such as 'structure', 'people' and 'systems'; and the 'culture' dimension is concerned with the need for a culture that can help an organisation in dealing with changes, supporting its strategy and deriving competitive advantages (Hubbard, 2004). After comparing their findings on high organisational performance to some other studies (Peters & Waterman,

1982; Collins & Porras, 1994; Collins, 2001), Hubbard et al. (2002:326) comment that 'to begin the task of improvement, organizations need to have a comprehensive understanding of what their strategy is, how their business runs and operates and what key capabilities it has which can be used to create competitive advantage in the marketplace.' Based on this comment, compared to the other dimensions in the strategy implementation model, the dimension 'capabilities' stands out as being a more critical dimension than other dimensions such as 'structure', 'people' and 'systems' for performance. 'Capabilities' are needed by organisations for execution of their strategy, adapting the other dimensions to changing external conditions and aligning and balancing all the dimensions in the model (Hubbard et al., 2002; Brenes, Mena & Molina, 2008).

Moreover, strategy implementation research has historically focused on the role of tangible organisational dimensions such as structure and systems. There has been an increased interest in the role of intangible organisational dimensions such as capabilities, culture, skills and leadership in strategy implementation (Homburg, Krohmer & Workman Jr, 2004). However, there is still a lack of empirical studies investigating the role of these intangible dimensions (Homburg, Krohmer & Workman Jr, 2004). Homburg et al (2004) call for more research to be done to fill this gap. In particular, they highlight that the organisational capabilities form an important dimension at the core of the strategy implementation approach. Organisational capabilities help organisations to 'sense the need to reconfigure the organisation's asset structure and to accomplish the necessary internal and external change' (Teece, Pisano & Shuen, 1997:520). Organisations use their capabilities to manage their structure, the way in which human capital is employed and their organisational systems for the pursuit of high performance (Barney, 1991; Eisenhardt & Sull, 2001; Helfat et al., 2007; Wang & Ahmed, 2007).

Homburg, Khromer and Workman Jr (2004) further highlight that organisational culture plays an important role in strategy implementation. They cited the argument by Porter (1985:24) that 'culture can powerfully reinforce the competitive advantage a generic strategy seeks to achieve, if the culture is an appropriate one.' Some scholars argue that high performance organisations have a culture that empowers their employees to be self-driven and receptive to changing external environmental conditions (Kotter & Heskett, 1992; Nicholls-Nixon, 2005). Therefore, in addition to

formulation-implementation balance, this study will examine the role of culture and capabilities in strategy implementation. Specifically, the study will examine the importance of the strategic implementation role of receptive culture and proactive capabilities for achieving high organisational performance. Receptive culture and proactive capabilities will be discussed in sections 2.3 and 2.4 respectively.

2.3 Receptive Culture

2.3.1 The Organisational Culture Perspective

Organizational culture is described as shared basic assumptions which are created, explored, developed and perceived by a given group as it learns to deal continuously with adapting to its external environment while it conscientiously reconciling and adapting its internal functions (Kotter & Heskett, 1992; Trompenaars & Hampden-Turner, 1998; Schein, 2004; Trompenaars & Hampden-Turner, 2004). It refers to 'the taken-for-granted values, underlying assumptions, expectations, collective memories, and definitions present in an organization' and conveys 'a sense of identity to employees, provides unwritten and, often, unspoken guidelines for how to get along in the organization' (Cameron & Quinn, 2005:14). It has a role in helping organisations with planning, directing, coordinating, synergising and leveraging on resources that are available or accessible in order to achieve their goals (Chan, Shaffer & Snape, 2004).

An organisational culture is like 'glue' that holds an organisation together and drives its employees to commit to it and to perform (Van den Berg & Wilderom, 2004). Kotter and Heskett (1992) argue that organisational culture is becoming a critical factor that determines the success or failure of companies in a world that is changing unpredictably and at increasing speed. Some scholars argue that, like it or not, all organisations will have an organisational culture of some sort (Trompenaars & Hampden-Turner, 1998; Schein, 2004). But it is important for organisations to recognise that the type of culture which they foster will likely have an impact on their performance (Kotter & Heskett, 1992; Trompenaars & Hampden-Turner, 2004). Cameron and Quinn (2005) argue that many high performance organisations which are leaders in their industry have a distinctive, readily identifiable, organisational culture.

Barney (1992) claimed that organisational culture needs to be at the core of understanding strategy implementation because it is critical in comprehending sources of competitive advantages. Strategy implementation requires the coordination and involvement of the whole organisation (Homburg, Krohmer & Workman Jr, 2004). Strategy scholars have identified effective organisational culture as important for effectively implementing plans in high performance organisations (Peters & Waterman, 1982; Collins & Porras, 1994; Hubbard et al., 2002; Homburg, Krohmer & Workman Jr, 2004). Empirical research has shown that organisational culture has an effect on organisational performance (Cameron & Ettington, 1988; Trice & Beyer, 1993; Denison & Mishra, 1995; Cameron & Quinn, 2005). Cameron and Quinn (2005:9) argue that 'although the tools and techniques may be present and change strategy implemented with vigour, many efforts to improvement organizational performance fail because the fundamental culture of the organization remains the same.' Stated differently, organisations need to pay attention to and manage their culture in order to achieve high organisational performance. This suggests that average and poor performance organisations have likely neglected the role of their organisational culture.

Organisations need to understand their culture in order to manage them during strategy implementation (Schein, 2004). Some scholars say that organisational culture plays a key role in reconciling differing viewpoints and in helping to challenge existing mental models, which then possibly results in organisations being more effective at implementing strategies (Okumus, 2003; Trompenaars & Hampden-Turner, 2004). When an organisation tries to make sense and to take advantage of changing circumstances surrounding strategy implementation, having a diversity of viewpoints can potentially produce better outcomes (Hubbard et al., 2002; Freedman, 2003; Mankins & Steele, 2005). However, at the same time, having differing viewpoints can risk paralysing an organization from taking any action if the differing viewpoints cannot be reconciled (Trompenaars & Hampden-Turner, 2004).

Organisations with long-term high organisational performance are associated with an organisational culture that helps them anticipate and be receptive to environmental change (Kotter & Heskett, 1992). In order to sustain high organisational performance, organisations need to foster a culture that is oriented towards improvement such as skills development (Chan, Shaffer & Snape, 2004), and seek out new innovations and guide the management of resources with consideration for competing for the future

(Hamel & Prahalad, 1994). That culture also embraces changes and inspires commitment to work with a high degree of receptiveness to changes (Kotter & Heskett, 1992; Chan, Shaffer & Snape, 2004).

Organisational growth, which is part of organisational performance, produces changes in the scale and scope of an organisation's activities (Nicholls-Nixon, 2005). As high growth produces dramatic changes, organisations which pursue high growth often stumble because they cannot cope with the pressures of these changes (Nicholls-Nixon, 2005). To cope with high growth, Nicholls-Nixon (2005) argues that organisations need to have an internal mechanism that enables periods of self-organised change to occur. Self-organised change pertains to the generation of ever-changing patterns of behaviour which can help an organisation to coordinate its activities, on a continuous basis, to deal with the change pressures that accompany high growth (Nicholls-Nixon, 2005). At the core of this self-organised change is an organisational culture that empowers an organisation to be self-driven in taking real time action to respond to changing environmental conditions (Nicholls-Nixon, 2005). Put differently, 'managing rapid growth may have less to do with creating and executing a master plan for change' than with having an organisational culture that enables periods of self-organised change to occur (Nicholls-Nixon, 2005:80).

There are different types of organisational culture such as 'adaptive culture', 'strong culture' and 'strategically appropriate culture' (Kotter & Heskett, 1992). For successful performance, Kotter and Heskett (1992) argue that 'adaptive culture' is needed to help organisations to successfully cope with changing environmental conditions. The term 'adaptive culture' was introduced by Kotter and Heskett (1992) to differentiate it from 'strong culture' and 'strategically appropriate culture'. 'Strong culture' is a culture which is characterised by having almost all managers share a set of relatively consistent values and methods of doing business but overlooks the 'fit' to environment (Kotter & Heskett, 1992). 'Strategically appropriate culture' is a culture which is characterised by a better fit to the strategy context but fails to cope with changes (Kotter & Heskett, 1992). 'Adaptive culture' is a culture which is characterised by the adoption of strategies that continuously respond to changing environmental conditions in order to achieve favourable performance outcomes (Kotter & Heskett, 1992). In this study, it is proposed that 'adaptive culture' be better termed 'receptive culture' because its role is essentially about helping an organisation to be receptive to changing external conditions,

and not about merely adapting to changes and/or adapting the organisation which the term ‘adaptive’ seems to connote.

If organisations maintain a state of readiness apt for exploiting external opportunities in a well-timed manner, they can expect to achieve high organisational performance (Eisenhardt & Sull, 2001). The opportunities surface because of the disequilibrium created by continuously changing environmental conditions. The disequilibrium does not come about in a predictive fashion (Eisenhardt & Sull, 2001). Receptive culture empowers organisations with a state of readiness that embraces change, to constantly look out for better ways to do things and empower its people to take action in a timely manner (Kotter & Heskett, 1992; Laurie, Doz & Sheer, 2006; Neo & Chen, 2007). With receptive culture, organisations become much more sensitive and self-driven in coping with external changes (Nicholls-Nixon, 2005). Therefore, receptive culture is an important dimension for achieving high performance (Kotter & Heskett, 1992; Nicholls-Nixon, 2005). It is important to examine the details of receptive culture and its strategic implementation role.

2.3.2 Factors of Receptive Culture

To develop a model that can better compare and study different organisational cultures, Van den Berg and Wilderom (2004) reviewed a number of the most important organisational culture models which included those developed by Van Muijen et al (1999), Hofstede et al (1990), O’Reilly, Chatman and Caldwell et al (1991), Gordon and DiTomaso (1992), Denison and Mishra (1995). Van Muijen et al (1999) developed their model – which consisted of factors rules orientation, innovation orientation, goal orientation and support orientation – for studying organisational culture in European organisations. Hofstede et al (1990) developed their model of polarities – which consisted of the factors loose vs. tight control, normative vs. pragmatic, process vs. results oriented, employee vs. job oriented, parochial vs. professional, open vs. closed system – based on their study of ten different organisations in Denmark and the Netherlands and took into consideration the effect of national environment on organisational culture.

O’Reilly, Chatman and Caldwell (1991) developed their model – which consisted of the factors detailed oriented, stability, team oriented, innovation oriented, results oriented, people oriented, and aggressive vs. easy going – for assessing person-organisation fit, and their study used longitudinal data from accountants and M.B.A. students and cross-sectional data from employees of government agencies and public accounting firms. Gordon and DiTomaso (1992) developed their model – which consisted of the factors accountability, systematic decision making, clarity of shared goals, innovation, action oriented, fairness of rewards, integration, and development and promotion from within – and found that their factors are associated with short-term organisational performance. Denison and Mishra (1995) developed their model – which consisted of the factors mission, consistency, adaptability and involvement – and found that their factors were useful predictors of organisational effectiveness.

Based on their review findings, Van den Berg and Wilderom (2004) developed a model of organisational culture which consisted of five factors. The factors were ‘autonomy’, ‘external orientation’, ‘inter-departmental coordination’, ‘human resource orientation’ and ‘improvement orientation’. They claimed that, when compared with the other models (Hofstede et al., 1990; O'Reilly, Chatman & Caldwell, 1991; Gordon & DiTomaso, 1992; Denison & Mishra, 1995; Van Muijen et al., 1999; Cameron & Quinn, 2005), their model is more holistic because it deals with the culture construct more broadly and explains better the dynamism of work groups. Van den Berg and Wilderom (2004) further claimed that their model will be useful to facilitate the comparison of organisational cultures and the accumulation of research findings. Also, they argue that organisational culture is better defined by the orientation of organisational practices, rather than by organisational values, because ‘values are typically not visible for employees’ and ‘organisations differed more strongly on practices than on values’ (Van den Berg & Wilderom, 2004:571).

However, Van den Berg and Wilderom’s study did not look into the phenomenon of high organisational performance (Wilderom, Van den Berg, Glunk & Maslowski, 2001; Van den Berg & Wilderom, 2004). But, the study can be used as a basis to identify important factors of the receptive culture for achieving high organisational performance. Their work, which compared important organisational culture models (Van den Berg & Wilderom, 2004:575), was adapted and shown in Table 2.2.

Table 2.2 A Comparison of Some Studies on the Organisational Culture Model[2]

Hofstede et al. (1990)	**O'Reilly, Chatman & Cadwell (1991)**	**Gordon & DiTomaso (1992)**	**Denison & Mishra (1995)**	**Van Muijen et al. (1999)**	**Van den Berg & Wilderom (2004)**
Loose vs. tight control	Detailed oriented Stability Team oriented	Accountability Systematic decision making Clarity of strategy/ shared goals	Mission Consistency	Rules orientation	Autonomy
Normative vs. pragmatic Process vs. results oriented	Innovation oriented Results oriented	Innovation / risk taking Action oriented	Adaptability	Innovation orientation Goal orientation	Improvement orientation
-	-	-	-	-	External orientation
Employee vs. job oriented Parochial vs. professional	People oriented	Fairness of rewards	-	Support orientation	Human resource orientation
Open vs. closed system	Aggressive vs. easy going	Integration / communication Development / promotion from within	Involvement	-	Inter-departmental coordination

NB. Factors of organisational culture models were inserted into the table according to the likely similarity of their role and/or function.

[2] The comparison was adapted from Van den Berg & Wilderom (2004).

Table 2.2 shows that all the factors in the study by Van den Berg and Wilderom (2004), except for external orientation, are also addressed by the other studies. Van den Berg and Wilderom (2004:574) included external orientation as a distinct variable in their model because they considered that 'all organizational units operate in an external environment' and 'a group's external orientation is very much a part of its internal functioning.' However, this viewpoint seems a tautological remark which implies that all the shared basic assumptions (or values) of a culture which are created, explored, developed and perceived by a given group are influenced by the group's external environment (Schein, 2004). For this reason, external orientation cannot be a distinct factor as claimed by Van de Berg and Wilderom (2004). Essentially, external orientation is one of the influences such as internal orientation, perceptions and experiences that shape culture variables. Therefore, external orientation will not be incorporated in this study.

Autonomy pertains to 'the degree to which employees have decision latitude at the job level' (Van den Berg & Wilderom, 2004:574). This suggests that the higher the level of autonomy, the more employees of an organisation are empowered to make their own decisions and take actions in making timely changes to their organisation. For this study, it is suggested that the term 'autonomy' be replaced with 'autonomous orientation' because the latter terms convey the idea of an organisation's inclination towards empowering its employees, while the earlier term conveys a 'passive' form of autonomy (Kotter & Heskett, 1992; Neo & Chen, 2007). Clearly, autonomous orientation is likely a factor of receptive culture because it helps organisations to be receptive to changing external conditions through empowering their employees to make their own decisions and take action.

Van den Berg and Wilderom (2004:574) explain that improvement orientation relates to the degree 'of inclination towards organizational improvement'. This suggests that the more a culture is inclined towards organisational improvements, the more employees of an organisation are motivated to actively look out for ways to make improvements and the larger is an organisation's capacity to embrace changes. Van de Berg and Wilderom (2004:574) point out that improvement orientation exudes 'the degree of proactivity that is intended to achieve ever better organizational results'. Clearly, improvement orientation is also likely a factor of receptive culture because it

helps organisations to be receptive to changing external conditions through orientating their employees to look out for ways to make improvements and to embrace changes.

Human resource orientation pertains to internal workings of a group while interdepartmental coordination pertains to productive inter-group communication (Van den Berg & Wilderom, 2004). Both the factors are readily observable parts of the organisational culture, which are fundamental to an organisation operating properly (O'Reilly, Chatman & Caldwell, 1991; Van Muijen et al., 1999; Van den Berg & Wilderom, 2004). However, the two factors do not help organisations to be receptive to external changing conditions. Therefore, they are not factors of receptive culture.

2.3.3 Importance of Receptive Culture Factors: Autonomous Orientation and Improvement Orientation

Based on the discussions above, autonomous orientation and improvement orientation together equip organisations with a state of readiness whereby employees are empowered to make their own decisions, to take actions in making timely changes to the firm, to actively look out for ways to make improvements, and to have the capacity to embrace changes (Van den Berg & Wilderom, 2004). Organisations need this state of readiness for achieving high organisational performance (Kotter & Heskett, 1992; Eisenhardt & Sull, 2001; Christensen, Raynor & Anthony, 2003; Laurie, Doz & Sheer, 2006; Neo & Chen, 2007). It is thus postulated that autonomous orientation and improvement orientation are important factors that form a receptive culture.

Hypothesis Development for Autonomous Orientation

Organisations with autonomous orientation encourage individual initiative and freedom, and their employees will stick their necks out and take risks (Cameron & Quinn, 2005). In their pursuit of growth and success, these organisations place emphasis on experimenting for improvement, acquiring resources, developing unique and new products or services (Cameron & Quinn, 2005). Autonomous orientation will add positively to activities that relate to such purposes as continuous improvement, the organisation of all disciplines and departments for the initial stage of the product design

process, exploration of the use of new technology, and innovative behaviour (Cameron & Quinn, 2005).

Based on the discussions above, autonomous orientation will have a positive influence on three factors – namely improvement orientation, adaptive capability and innovative capability. Adaptive capability and innovative capability are factors of proactive capabilities which will be discussed later in section 2.4. First, autonomous orientation will have a positive effect on improvement orientation because autonomous orientation supports improvement activities, and central to improvement orientation is the notion of an active lookout for ways to make improvements (Van den Berg & Wilderom, 2004:574). Second, autonomous orientation will have a positive effect on adaptive capability because autonomous orientation supports the acquiring of new resources which is one aspect of adaptive capability (Wang & Ahmed, 2007). Last, autonomous orientation will have a positive effect on innovative capability because the more an organisation emphasises autonomous orientation, the more innovative behaviour will be supported (Wang & Ahmed, 2007).

The effects of autonomous orientation on improvement orientation, adaptive capability and innovative capability are illustrated in Figure 2.4. Therefore, the associated hypotheses for testing in the current study are as follows:

Hypothesis 2a *A higher level of autonomous orientation is associated with a higher level of improvement orientation.*

Hypothesis 2b *A higher level of autonomous orientation is associated with a higher level of adaptive capability.*

Hypothesis 2c *A higher level of autonomous orientation is associated with a higher level of innovative capability.*

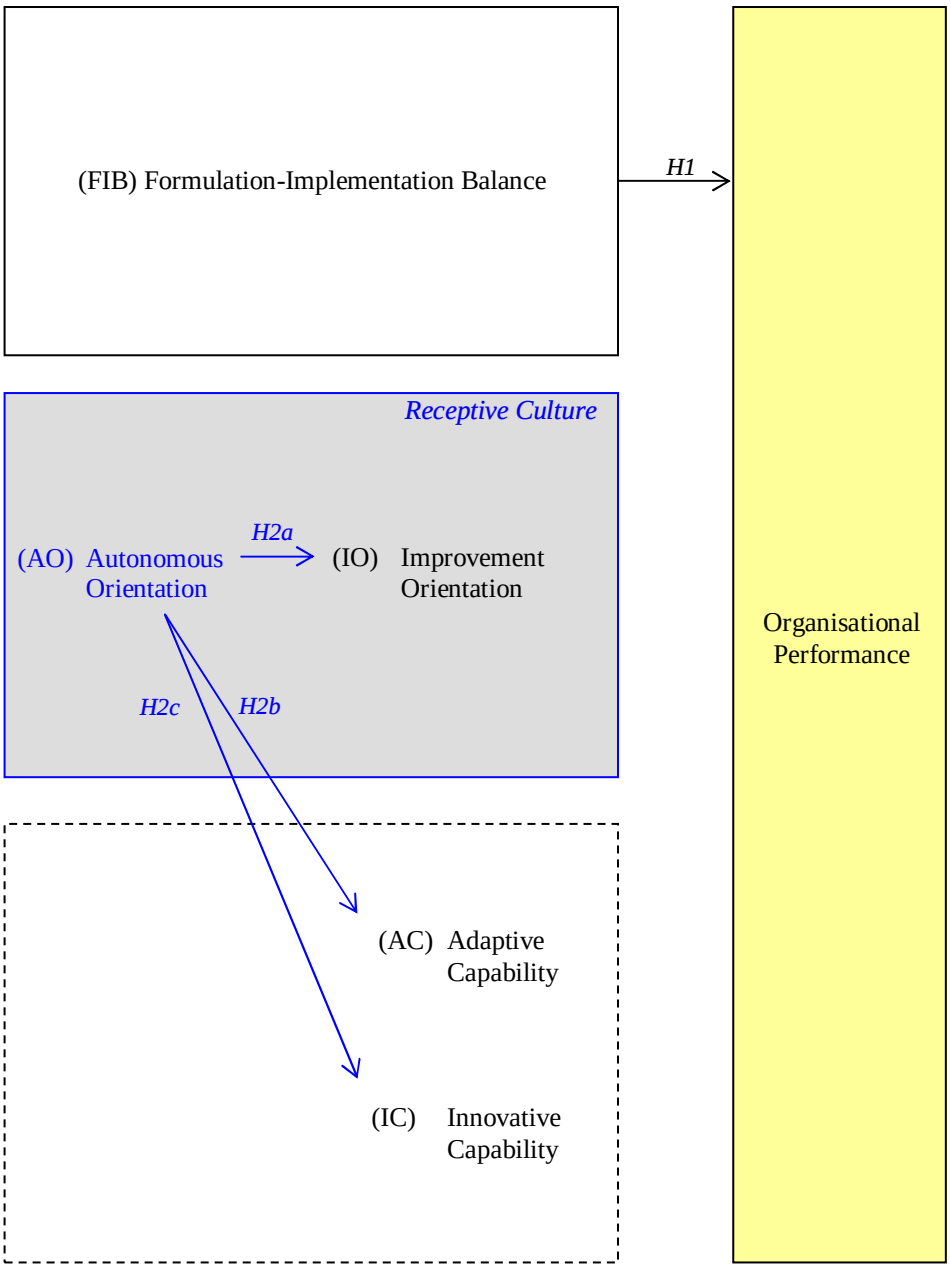

Figure 2.4 'Autonomous Orientation' (A Factor of Receptive Culture) for Achieving High Organisational Performance

Measures of Autonomous Orientation

Organisations with autonomous orientation will tend to favour empowering their employees to make their own decisions and take action in making timely changes to the organisation, and also favour a more decentralised decision-making process, especially on operational issues (von Hippel, Thomke & Sonnack, 1999; Cameron & Quinn, 2005;

Huston & Sakkab, 2006). Their employees are generally more self-driven and willing to take personal risks (von Hippel, Thomke & Sonnack, 1999; Cameron & Quinn, 2005; Huston & Sakkab, 2006). Based on the findings, Figure 2.5 shows the proposed measures of autonomous orientation. The more emphasis an organisation places on each of the measures, the greater will be its level of autonomous orientation (Cameron & Quinn, 2005).

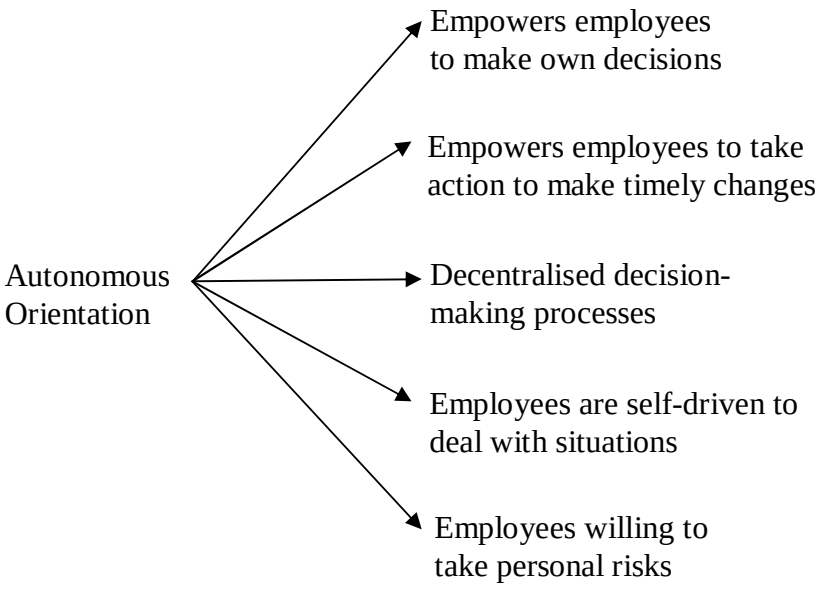

Figure 2.5 Measures of Autonomous Orientation

Hypothesis Development for Improvement Orientation

Organisational culture has high potential for creating competitive advantages because of its inherent implicitness, dependence on its unique path through history and complexity (Barney, 1992; Chan, Shaffer & Snape, 2004). Barney (1992) argues that organisational culture can directly impact on sustaining performance. Organisations will gain a valued source of competitive advantage when they shape their culture to be receptive to environmental changes (Ireland & Hitt, 2005). Ireland & Hitt (2005:71) claimed that 'culture provides the context within which strategies are implemented'. Therefore, the more receptive the culture of an organisation, a better outcome of strategy implementation can be expected. Organisations that have a receptive culture, particularly an improvement orientation, will likely derive a better outcome from the execution of their strategy (Kotter & Heskett, 1992; Van den Berg & Wilderom, 2004;

Neo & Chen, 2007). Improvement orientation is expected to be positively associated with organisational performance.

The direct effect of improvement orientation on organisational performance is illustrated in Figure 2.6. Based on the proposed model, it is proposed that the effect be empirically tested. Therefore, it is hypothesised that:

Hypothesis 3 *A higher level of improvement orientation is associated with higher organisational performance.*

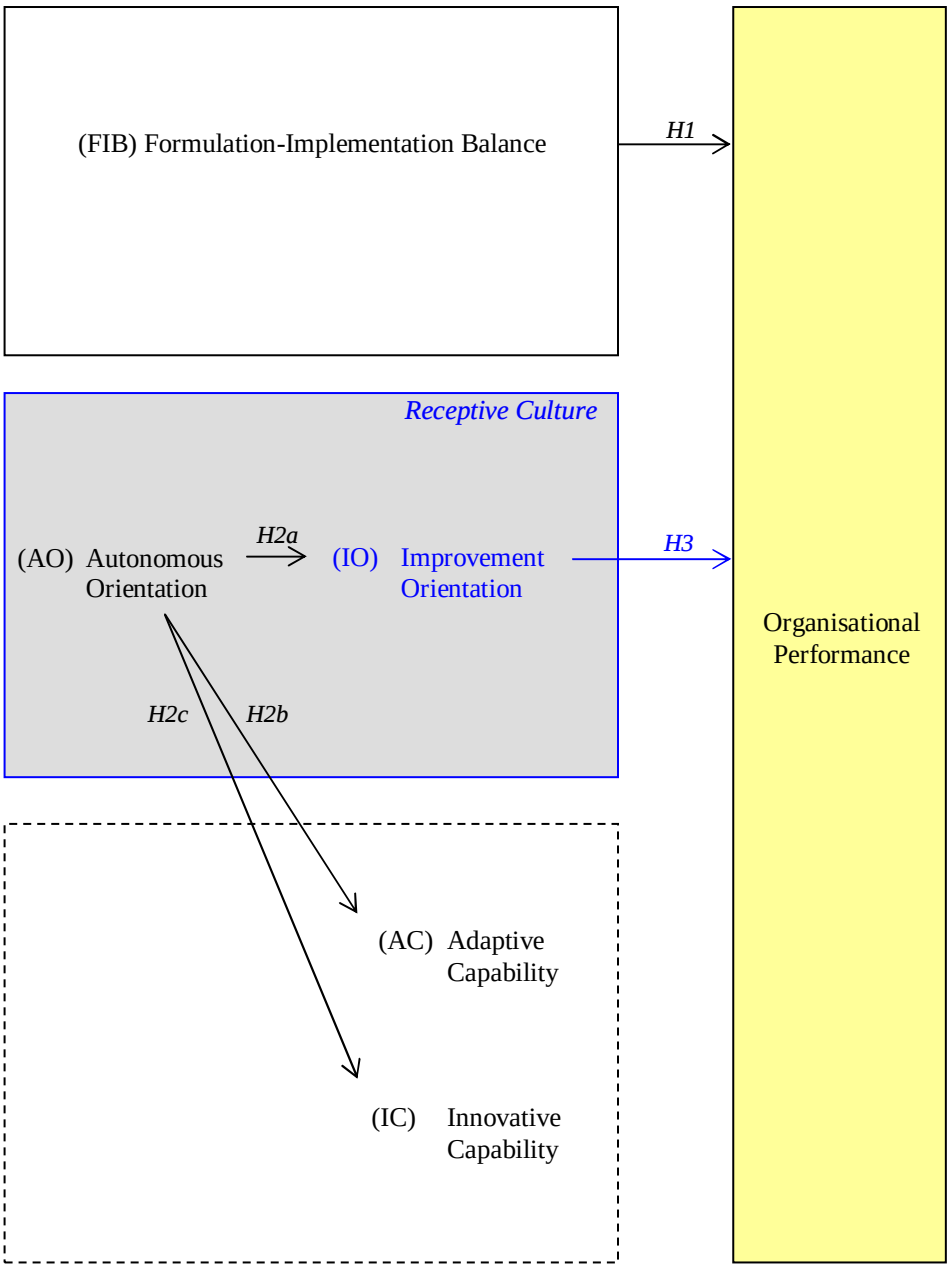

Figure 2.6 'Improvement Orientation' (A Factor of Receptive Culture) for Achieving High Organisational Performance

Measures of Improvement Orientation

For organisations with an improvement orientation, their workforce has an inclination to source better ways of doing things, and are willing to try them out (Cameron & Quinn, 2005). These organisations tend to place emphasis on processes such as reviewing actual ongoing performance data, probing the underlying causes of

observed facts and implementing new policies and systems (Cameron & Quinn, 2005; Neo & Chen, 2007). Based on the findings, Figure 2.7 shows the proposed measures of improvement orientation. The more emphasis an organisation places on each of the measures, the greater will be its level of improvement orientation (Cameron & Quinn, 2005)

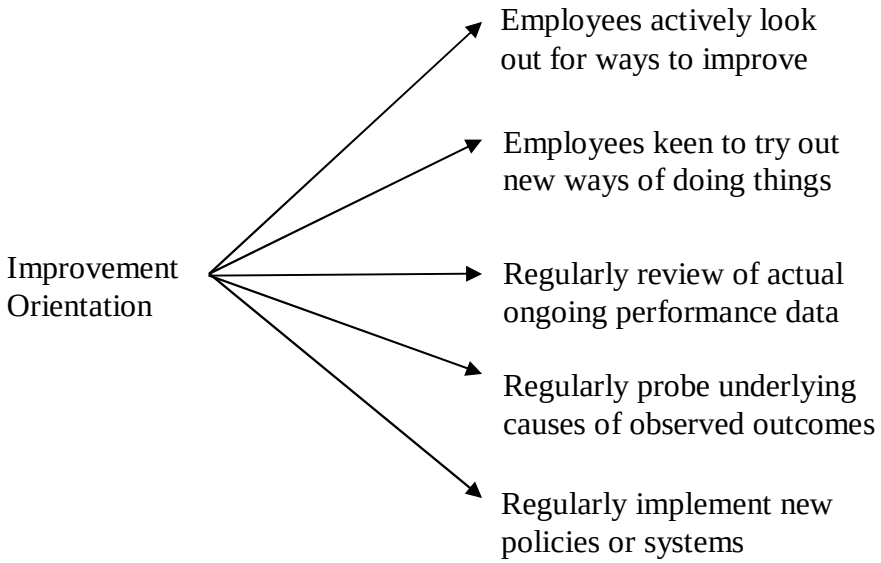

Figure 2.7 Measures of Improvement Orientation

2.4 Proactive Capabilities

2.4.1 The Dynamic Capabilities Perspective

The notion of dynamic capabilities has its roots in the resource-based view theory (Teece, Pisano & Shuen, 1997). In the resource-based view (RBV), scholars argue that the essence of an organisation's competitive advantage is its resources and capabilities (Wernerfelt, 1984; Barney, 1991). Organisations need to exploit their valuable, rare, non-imitable and non-substitutable resources in order to derive competitive advantages for performance (Barney, 1992). The term 'resources' include all assets, firm attributes, information, technologies and human capital controlled by an organisation that enable it to conceive of and implement strategies that improve its effectiveness and efficiency (Barney, 1991). Ray, Barney and Muhanna (2004) argue that organisations cannot expect to gain any competitive advantage if they cannot leverage and use their resources in an effective and efficient manner.

Organisational abilities which can exploit resources are described as ‘capabilities’ (Barney, 1991). Successful organisations have capabilities that can effectively organise and reorganise available resources in order to cope with the changing environment in a timely manner (Teece, Pisano & Shuen, 1997). Prastacos et al. (2002) state that it is the internal capabilities which organisations possess, that give organisations the adaptability to perform and prosper. Such capabilities are organisational abilities to ‘perform a coordinated set of tasks, utilizing organizational resources to achieve a particular and desired end result’ (Helfat & Peteraf, 2003:999). Judge and Elenkov (2005:895) theorise that “organizational capacity to change is paramount for dealing with any changing strategic context’. Stated differently, when dealing with changing external environment, organisations that have capabilities to better exploit their resources and to strategically manoeuvre their organisational processes will have a competitive edge in achieving high organisational performance. The capabilities can also help organisations to create a useful capacity to explore, embrace and exploit change. Sirmon, Hitt and Ireland (2007) highlight that although the notion of value creation starts with the provision of products or services to meet customers’ needs, competitive advantage is derived only when the value of the products or services are relatively greater than can be provided by the competition.

Teece, Pisano and Shuen (1997) claimed that it is the ‘dynamic capabilities’, and not the ordinary capabilities, which contribute to an organization’s competitive advantage. Teece, Pisano and Shuen (1997:515) define dynamic capabilities as the ‘firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments’. Eisenhardt and Martin (2000:1106) define dynamic capabilities as ‘a set of strategic and organizational processes like product development, alliancing, and strategic decision making that create value for firms’. In order to be a source of competitive advantage, Eisenhardt and Martin (2000:1117) add that dynamic capabilities are needed to create resource configurations ‘sooner, more astutely, and more fortuitously’ than the competition. Barney et al. (2001:630) define dynamic capabilities as organisational capabilities that enable organisations to apply their competitive advantages to create resource configurations.

Wang and Ahmed (2007:43) define dynamic capabilities as the third-order foundation of capabilities and are involved in ‘adaptation, renewal, reconfiguration and recreation of resources, capabilities and core capabilities’. They argue that there is a

difference between capabilities, core capabilities and dynamic capabilities. Wang and Ahmed (2007) explained that resources and capabilities are zero- and first-order foundation, and core capabilities are second-order foundation that are involved in integrating resources and capabilities to fit the strategy content. Based on the various definitions, it can be said that dynamic capabilities are organisational capabilities that bring about internal strategic and tangible changes to derive competitive advantage in order to capitalise on external dynamic environmental conditions (Teece, Pisano & Shuen, 1997; Eisenhardt & Martin, 2000; Barney, Wright & Ketchen Jr, 2001). Dynamic capabilities enable organisations to better exploit their resources and to strategically manoeuvre organisational processes, in a well-timed and ongoing basis, in order to achieve high organisational performance (Helfat et al., 2007; Wang & Ahmed, 2007).

Adaptability: An Attribute of Proactive Capabilities

Wang and Ahmed (2007:36) argued that successful organisations are able to 'identify and capitalize on opportunities, through linking internal resources advantage to external marketplace-based competitive advantage'. Furthermore, these organisations are found to be able to adapt their product-market scope quickly (Wang & Ahmed, 2007) in order to optimally exploit opportunities in the changing environment (Eisenhardt & Sull, 2001; Hubbard et al., 2002). These organisations are more adept and more effective at making internal strategic changes when compared to average and low performance organisations. If an organisation is not able to make the internal changes, it is likely to derive a poor performance outcome (Freedman, 2003; Homburg, Krohmer & Workman Jr, 2004; Mankins & Steele, 2005). If the organisation is not able to make the internal changes appropriately and in a timely fashion, the full value of its strategy implementation cannot be obtained (Freedman, 2003; Mankins & Steele, 2005). Organisations need adaptability to capitalise on the best external opportunities available at different moments in time, especially those that are not easily anticipated by competitors (Eisenhardt & Sull, 2001). External opportunities include sporadic opportunities which come about unexpectedly but can create a significant impact on performance if the opportunities are successfully capitalised by organisations, and it is

important for organisations to be able to grapple with the uncertainty that accompanies the opportunities (Eisenhardt & Sull, 2001).

Moreover, Sirmon, Hitt and Ireland (2007) argue that organisations can create competitive advantages by configuring and reconfiguring resources internally in anticipation of future needs. Also, organisations need to synchronise internal changes which they are making with the pace of changing external opportunities (Christensen, Raynor & Anthony, 2003; Nicholls-Nixon, 2005). However, organisations generally bring about internal changes as a reaction to changing environmental conditions for survival reasons. There are those that bring about internal changes as a strategic response to changing environmental conditions in order to capitalise on prospective-change patterns (Christensen, Raynor & Anthony, 2003; Nicholls-Nixon, 2005; Laurie, Doz & Sheer, 2006). These organisations are probably high performing organisations (Eisenhardt & Sull, 2001; Christensen, Raynor & Anthony, 2003; Ireland & Hitt, 2005). Therefore, adaptability is an important factor for the achievement of high organisational performance.

Innovation: Second Attribute of Proactive Capabilities

In addition to adaptability, organisations know that they must also grow to achieve high organisational performance, and innovation is key to growth (Christensen, Raynor & Anthony, 2003). To grow, Christensen, Raynor and Workman (2003:3) argued that organisations need 'a way to unlock the process of innovation and create innovation-driven growth businesses again and again'. Moreover, some scholars found that in some industries, innovation is a critical factor for organisations to perform in the light of changing external conditions (Tripsas, 1997; Deeds, DeCarolis & Coombs, 2000; Lazonick & Prencipe, 2005). The various forms of innovation include product innovation, market innovation, process innovation, behaviour innovation and strategic innovation (Wang & Ahmed, 2004). Product innovation pertains to 'novelty and meaningfulness of new products introduced to the market at a timely fashion', market innovation pertains to 'newness of approaches that companies adopt to enter and exploit the targeted market', process innovation pertains to 'new production methods or new management approaches', behavioural innovation pertains to 'sustained behavioural change towards innovation', and strategic innovation pertains to 'development of new

competitive strategies that create value for the firm' (Wang & Ahmed, 2004:304-305). High performance organisations give attention to producing various combinations of innovations in order to derive healthy growth (Christensen, Raynor & Anthony, 2003; Wang & Ahmed, 2004). Therefore, innovation is another important variable for an organisation to achieve high organisational performance (Wang & Ahmed, 2004).

Furthermore, Christensen, Raynor & Anthony (2003) claim that organisations which place emphasis on developing disruptive innovations will derive robust and continuous growth. Disruptive innovations involve offering new business value propositions that create new markets or serve the low end of established markets. The writers highlight that seeking out growth based on disruption will depend on a process for developing and shaping disruptive ideas. That process hinges 'more on pattern recognition than on data-driven market analysis' (Christensen, Raynor & Anthony, 2003:5). Put differently, to continually generate healthy growth and thereby achieve sustainable high organisational performance, it is important for organisations to be able to develop foresights about opportunity possibilities and then to exploit them in an innovative and disruptive fashion (Kohli & Jaworski, 1990; Slater & Narver, 1994; Boyd & Fulk, 1996; Hubbard et al., 2002; Homburg, Krohmer & Workman Jr, 2004; Koh, Hubbard, Seet & Tan, 2009). But to develop the foresights, it may not be sufficient for organisations to place emphasis merely on employing their innovation ability in order to produce disruptive ideas which hopefully will match their market change patterns. Many organisations recognise that it is a daunting task to persevere in interpreting market change signals effectively (Peters & Waterman, 1982; Ancona & Caldwell, 1992; Kumar, Subramanian & Strandholm, 2001; Koh et al., 2009).

A Means to Make Sense of Changing External Conditions: Third Attribute of Proactive Capabilities

In addition to adaptability and innovation ability, organisations need to develop an ability that can help them in recognising which, and knowing when, changes in their environment ought to be exploited (Helfat et al., 2007). The difficulties lie in how to be informed and not to be inundated with information, how to generate innovative options of response and not to merely react to circumstances, and how to take timely action and not to be out-manoeuvred by competition. The massive amount of available market

information usually overwhelms an organisation (Peters & Waterman, 1982; Ancona & Caldwell, 1992; Kumar, Subramanian & Strandholm, 2001; Koh et al., 2009). Perhaps monitoring and deciphering competitor movements can help to better decipher market signals since they will probably be doing the same (Tyson, 1990; Paine, 1991; Fuld, 1994; Kahaner, 1997). It will not be possible for organisations to fuel the growth of any promising disruptive innovations without making adjusts or changes to their other organisational processes (Christensen, Raynor & Anthony, 2003; Wang & Ahmed, 2007). Therefore, for achieving high organisational performance, in addition to adaptability and innovation ability, organisations also need to have the means to effectively make sense of their changing environmental conditions and respond to them (Kumar, Subramanian & Strandholm, 2001; Wang & Ahmed, 2007; Koh et al., 2009).

Proactive Capabilities: A Particular Set of Dynamic Capabilities

In this study, the set of dynamic capabilities which can help organisations to have adaptability, innovation and a means to make sense of changing external conditions, will be termed 'proactive capabilities' to denote that they are employed by high performance organisations in a proactive manner to capitalise on environmental prospective-change patterns (Eisenhardt & Sull, 2001; Christensen, Raynor & Anthony, 2003; Ireland & Hitt, 2005; Nicholls-Nixon, 2005; Laurie, Doz & Sheer, 2006). Stated differently, proactive capabilities enable organisations to bring about internal changes as a strategic response to changing environmental conditions in order to capitalise on prospective-change patterns (Eisenhardt & Sull, 2001; Christensen, Raynor & Anthony, 2003; Ireland & Hitt, 2005); to produce various combinations of innovations in order to derive healthy growth (Christensen, Raynor & Anthony, 2003; Wang & Ahmed, 2004); and to develop foresights about opportunity possibilities and then exploit them (Kohli & Jaworski, 1990; Kumar, Subramanian & Strandholm, 2001; Homburg, Krohmer & Workman Jr, 2004). Therefore, proactive capabilities are important for achieving high organisational performance. It is important to examine the details of proactive capabilities and their strategic implementation role.

2.4.2 Factors of Proactive Capabilities

To identify the particular set of dynamic capabilities that makes up proactive capabilities, in Table 2.3 a number of important studies on dynamic capabilities were compared (Teece, Pisano & Shuen, 1997; Eisenhardt & Martin, 2000; Barney, Wright & Ketchen Jr, 2001; Helfat & Peteraf, 2003; Sirmon, Hitt & Ireland, 2007; Wang & Ahmed, 2007). The studies seemed to suggest that there are three main dynamic capabilities (Wang & Ahmed, 2007). The three dynamic capabilities are: (i) adaptive capability which helps an organisation to introduce and manage changes; (ii) innovative capability which helps an organisation to develop new products and/or markets; and (iii) absorptive capability which helps an organisation to manage knowledge (Zahra & George, 2002; Gibson & Birkinshaw, 2004; Wang & Ahmed, 2007).

As discussed earlier, proactive capabilities help organisations to acquire adaptability, innovation and a means to make sense of changing external conditions in order to capitalise on environmental prospective-change (Eisenhardt & Sull, 2001; Christensen, Raynor & Anthony, 2003; Ireland & Hitt, 2005; Nicholls-Nixon, 2005; Laurie, Doz & Sheer, 2006). Based on the description of proactive capabilities, adaptive capability is likely a factor of proactive capabilities because it helps organisations to have adaptability by introducing and managing changes. As well, innovative capability is a factor of proactive capabilities because it helps organisations to be innovative by developing new products and/or markets. Therefore, it is proposed that adaptive capability and innovative capability are factors of proactive capabilities.

Table 2.3 A Comparison of Dynamic Capabilities Understanding Among Some Studies

<table>
<tr><th>Teece, Pisano & Shuen (1997)</th><th>Eisenhardt & Martin (2000)</th><th>Barney, Wright and Ketchen Jr (2001)</th><th>Helfat & Peteraf (2003)</th><th>Sirmon, Hitt & Ireland (2007)</th><th>Wang & Ahmed (2007)</th></tr>
<tr><td rowspan="2">Ability to integrate, build and reconfigure internal and external competences to address rapidly changing environments</td><td rowspan="2">Ability to manipulate resources into value-creating strategies, including organizational and strategic processes e.g. alliancing and product development

But evolving and serves as a temporary source of competitive advantage</td><td>Ability to change</td><td rowspan="3">Capability that further branches into either being renewed, redeployed, recombined, replicated, retrenched or retired

NB. Common capability follows the general pattern of founding, development and maturity</td><td>Ability to structure resource portfolio

Ability to bundle resources to build capabilities</td><td>Adaptive capability</td></tr>
<tr><td>-</td><td>Ability to leverage capabilities to exploit market opportunities</td><td>Innovative capability</td></tr>
<tr><td>-</td><td>-</td><td>Ability to learn</td><td>-</td><td>Absorptive capability</td></tr>
</table>

NB. Factors of dynamic capabilities were inserted into the table according to likely similarity of their function.

However, absorptive capability is not likely a factor of proactive capabilities because it does not help an organisation to continuously monitor and make sense of the changing external environmental conditions which are needed for the pursuit of high performance (Christensen, Raynor & Anthony, 2003; Nicholls-Nixon, 2005; Laurie, Doz & Sheer, 2006). Moreover, adaptive capability and innovative capability need to be enabled by a capability that can help organisations to continuously match their outputs with the changing external environmental conditions (Prastacos et al., 2002). Organisations will normally initiate a process of internal organisational change, based on the interpretation of change-patterns, to deal with the external environmental changes (Hamel & Prahalad, 1994; Prastacos et al., 2002). It is proposed that external intelligence capability be considered as a factor of proactive capabilities in place of absorptive capability. External intelligence capability has its roots in the organisational intelligence perspective.

Organisational intelligence is a relatively new field of study (Bernhardt, 1994; Fuld, 1994; Herring, 1996; Kahaner, 1997; Winkler, 1997; Shaker & Gembicki, 1999). The study centres on a means for collecting, analysing and disseminating key information about business activities and environmental conditions, that can create foresight and render an insightful picture of intentions, capabilities, or activities, as well as their possible implications and consequences, and responding accordingly to further the company's goals (Kohli & Jaworski, 1990; Kahaner, 1997; Homburg, Krohmer & Workman Jr, 2004; Menguc & Auh, 2006). The study of organisational intelligence has the potential to grow into an important field of study as the business world becomes more complex, more global, more technological, and more competitive.

Since organisational intelligence is a relatively new field of study and has the potential to become an important field of research, a reasonable portion of this chapter has been accorded a review of the literature to discuss external intelligence capability and the process of external intelligence capability.

Organisations today have ready access to operational information and accumulated business knowledge, which is facilitated largely by the rapidly advancing information and communications technology (Kahaner, 1997; Kumar, Subramanian & Strandholm,

2001; Koh et al., 2009). However, merely having possession of operational business information and business knowledge may no longer provide organisations with a competitive advantage (Kahaner, 1997; Kumar, Subramanian & Strandholm, 2001; Koh et al., 2009). Put differently, merely being able to gather, analyse and communicate business information may no longer help companies to perform better. It has become necessary for organisations to have and to use them in order to survive (Hambrick, 1981; Jennings & Lumpkin, 1992).

Barney and Zajac (1994) argued that the quality of strategy implementation is dependent on the broader competitive context within which an organisation is operating. This suggests that to derive desirable outcomes from their strategies, it is important for organisations to introduce changes to their plans as they go through the implementation phase in response to changes in the external environmental conditions (Eisenhardt & Sull, 2001; Christensen, Raynor & Anthony, 2003). The changes are made to ensure that the business proposition offered by organisations can better meet the changing needs of customers, and is not easily followed by the competition. To do this, organisations will likely need to employ organisational intelligence to generate foresights about changing external opportunities, effectively prioritise the opportunities, and decide when to pull out of dwindling opportunities (Eisenhardt & Sull, 2001; Christensen, Raynor & Anthony, 2003).

Furthermore, in order to gain a competitive edge, organisations today will likely need to generate insights into their business operations and foresights about opportunity possibilities (Eisenhardt & Sull, 2001; Laurie, Doz & Sheer, 2006). Put differently, business insights and foresights are outcomes of using organisational intelligence. Therefore, it is important for organisations to be able to turn operational information and business knowledge into organisational intelligence (Kahaner, 1997). Hubbard et al. (2002) found that high performance organisations maintain an externally focused posture in understanding their customers, customers' changing needs and happenings in the marketplace. To do so, these organisations employed organisational intelligence to continuously monitor changes in their external environments and making sense therein of prospective change-patterns (Kumar, Subramanian & Strandholm, 2001; Christensen, Raynor & Anthony, 2003).

Organisational intelligence also enables an organisation to be externally focused on understanding customers' current and future needs and exogenous factors that influence those needs (Kohli & Jaworski, 1990; Slater & Narver, 1994; Homburg, Krohmer & Workman Jr, 2004). In addition to better understanding continuously changing customer needs and wants, the increasing competitive setting of the business environment today also warrants the need to employ organisational intelligence to interpret movements by competitors, and to respond to that intelligence (Tyson, 1990; Fuld, 1994; Kahaner, 1997). Studies have shown evidence of a positive relationship between organisational intelligence and its return on assets (ROA) (Kohli & Jaworski, 1990); sales growth and new product success (Slater & Narver, 1994); and successful implementation of strategy (Homburg, Krohmer & Workman Jr, 2004).

Existing and related literatures on organisational intelligence seems to suggest that there are two main streams of study contained therein, namely internal intelligence capability and external intelligence capability (Kohli & Jaworski, 1990; Tyson, 1990; Bernhardt, 1994; Fuld, 1994; Herring, 1996; Kahaner, 1997; Shaker & Gembicki, 1999; Kumar, Subramanian & Strandholm, 2001; Homburg, Krohmer & Workman Jr, 2004; Menguc & Auh, 2006). Internal intelligence capability looks into issues relating to resources, internal processes and activities in order to generate business insights for operational advantage (Barney & Zajac, 1994; Kumar, Subramanian & Strandholm, 2001; Hubbard et al., 2002). External intelligence capability looks into issues relating to external factors such as customers and competitors in order to produce strategic business advantage in response to changing external environmental conditions (Kahaner, 1997; Homburg, Krohmer & Workman Jr, 2004; Menguc & Auh, 2006).

To sum up, organisations will need to employ external intelligence capability in their pursuit of achieving high organisational performance (Nicholls-Nixon, 2005; Laurie, Doz & Sheer, 2006). As pointed out by some scholars, to achieve this desired phenomenon, it is important for organisations to have the means to continuously identify and monitor the vast opportunities in the marketplace in order to make sense of prospective change-patterns (Eisenhardt & Sull, 2001; Christensen, Raynor & Anthony, 2003; Laurie, Doz & Sheer, 2006; Helfat et al., 2007).

External Intelligence Capability

External intelligence capability is based on the notion that an increased understanding of customers' changing behaviour and competitors' movements will lead to more effective strategy (Bernhardt, 1994). It has been defined as a systematic approach to gathering, filtering, interpreting and acting on key business information (Sammon, Kurland & Spitalnic, 1984; Winkler, 1997; Shaker & Gembicki, 1999). An important point to note is that the information can come from any and every source, gathered. When collectively and appropriately interpreted, the information can render an insightful picture of intentions, activities or capabilities, and their possible implications and consequences.

Another important point is that the product of external intelligence capability ought to be written as 'actionable' information, whereby action can be taken in response to it, and specifically adapted to the business world (Kahaner, 1997). It is then disseminated to decision-makers at various levels in a visually effective, timely and secure manner (Kahaner, 1997). Employment of external intelligence capability may involve re-engineering work of organisation infrastructure so that senior management may base their decision-making and actions primarily on intelligence (Kahaner, 1997).

The description of external intelligence capability seems to correspond to the description of dynamic capabilities as well as the latter part of the description of the role of proactive capabilities (refer to Table 2.3). Once again, dynamic capability is described as organisational capabilities that bring about internal strategic and tangible changes to derive competitive advantages in order to capitalise on external dynamic environmental conditions (Teece, Pisano & Shuen, 1997; Eisenhardt & Martin, 2000; Barney, Wright & Ketchen Jr, 2001). And the latter part of the proactive capabilities' description pertains to the development of foresights about opportunity possibilities and the exploitation of the foresights (Kohli & Jaworski, 1990; Kumar, Subramanian & Strandholm, 2001; Homburg, Krohmer & Workman Jr, 2004). Therefore, it can be said that external intelligence capability is a dynamic capability and in specific, a factor of proactive capabilities.

External intelligence capability contributes to an organisation's planning processes through the development and evaluation of strategic issues and alternatives; the selection and implementation of key strategies; the recognition of the need for and the

design of mid-course implementation adjustments; and the nurturing of a supportive organisational culture (Sammon, Kurland & Spitalnic, 1984; Noble, 1999; Varadarajan, 1999; Hubbard et al., 2002; Homburg, Krohmer & Workman Jr, 2004). It also helps an organisation to evaluate its positioning against its competitive environmental conditions, which include the competitors it faces (Bernhardt, 1994). Hence, especially in volatile environmental conditions, the consequences for formulating or implementing business strategy without the benefit of external intelligence capability can be disastrous (Bernhardt, 1994; Eisenhardt & Sull, 2001; Christensen, Raynor & Anthony, 2003; Helfat et al., 2007).

Employment of external intelligence capability may involve re-engineering of the organisation infrastructure so that senior management base their decision-making and actions primarily on intelligence (Kahaner, 1997). Herring (1996) argues that having an organisational process that supports external intelligence capability is more important than an organisation structure that facilities the work, particularly when the company must adapt to a volatile external environment.

External Intelligence Capability Process

There are four stages that scope the fundamental external intelligence process. The stages are to plan & direct; collect & collate; analyse & translate; and communicate & take action (Tyson, 1990; Bernhardt, 1994; Kahaner, 1997; Menguc & Auh, 2006), as portrayed in Figure 2.8. However, many companies are inclined to skip stages such as plan & direct, and communicate & take action (Kahaner, 1997). One possible reason is that companies do not understand the importance of each stage. The outcomes of the communicate & cake action stage will depend on the insights gained from the analyse & translate stage, which in turn depends on the effectiveness of the collect & collate stage that is guided by work done in the plan & direct stage. When companies deal with external intelligence capability in an ad-hoc manner, they will likely miss out many strategic and fleeting opportunities which are usually difficult to spot (Bernhardt, 1994; Kahaner, 1997). These companies are inclined to trade off shorter term benefits for longer term and more sustainable gains (Bernhardt, 1994). For some organisations, it is not surprising that some critical information still resides in the minds of their managers,

who prefer to discuss their thoughts in planning sessions rather than collectively interpret all the information to generate insights (Bernhardt, 1994).

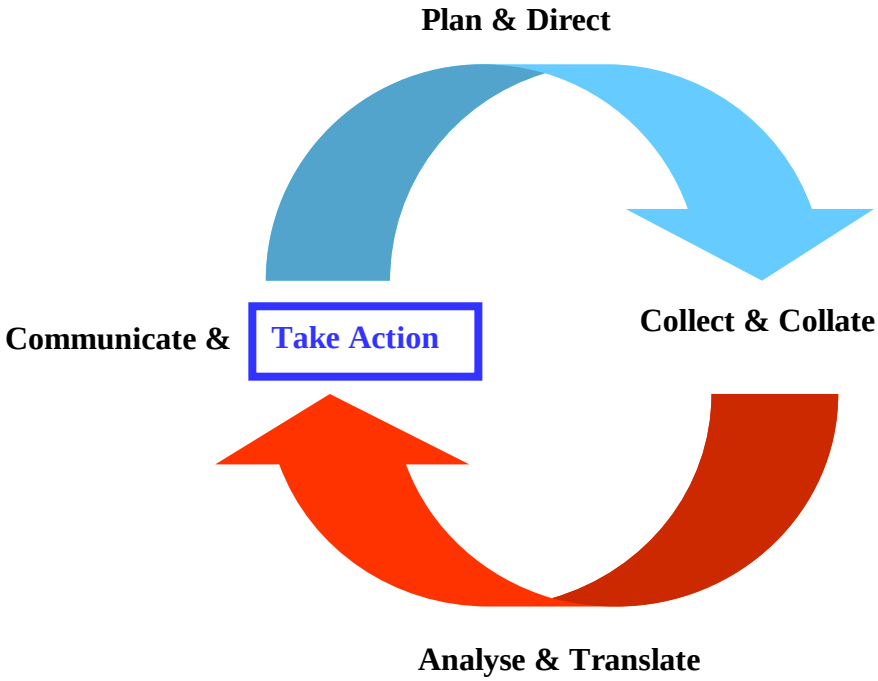

Figure 2.8 External Intelligence Capability Process

The plan & direct stage involves efforts to derive a clear understanding of the users' needs and time constraints, have in place a communication means to inform and engage with users on progress, and develop plans for the next three stages (Kahaner, 1997). Its requirements should be developed in consideration of the full competitive spectrum, which means taking account of near term, intermediate and potential viewpoints (Sammon, Kurland & Spitalnic, 1984). It is not uncommon for companies to overlook the plan & direct stage. Bernhardt (1994) recommended that organisations appoint an intelligence champion or coordinating manager, who can anticipate as well as respond to intelligence needs, and the manager should be clear about what is not external intelligence capability.

External intelligence capability is not a surrogate of tasks that come within the domains of a corporate library or market research department; it is not market intelligence per se; and it is not to be confused with as a sub-component of an

organisation's environmental scanning system (Bernhardt, 1994). External intelligence capability is a distinct process that produces unique products tailored to the particular requirements of the intelligence users, which include generating insights to such business issues as listed in Table 2.4 below.

Table 2.4 Some Business Issues[3] Addressed by External Intelligence Capability

- Why a competitor seems to be gaining market share
- Why a competitor seems to always be ahead in seizing opportunities brought about by environmentally changing conditions
- How to pull ahead of the competition and further establish the firm's positioning
- How to tell when a strategy is no longer sustainable
- How to validate analysis and planning, especially when based on weak information and many assumptions, before investing the money
- How to identify and capitalise on sporadic external opportunities especially when competitors undergo changes or make a blunder
- What emerging business models can potentially threaten own position
- What new scientific developments can fundamentally affect the economics of the industry
- What new substitutes can threaten own brand equity

The collect & collate stage involves gathering and bringing together raw information, and the source of information can be categorised into primary and secondary sources (Winkler, 1997). This stage is commonly referred to as the research phase of external intelligence capability process (Bernhardt, 1994). Attention is placed on evaluating the reliability and validity of information, identifying anomalies in information, and adhering to ethics associated with data gathering. Primary sources provide information that have not been changed, altered or otherwise tainted by opinion or selection, while secondary sources provide information that has been altered by opinion (Winkler, 1997). Common sources of information include computer-based information, formal documents, draft documents, scrap paper, internal correspondence, legal filing, media

[3] The issues were adapted from Bernhardt (1994).

publications and other open-source information, informal meetings, interviews, and casual conversations (Winkler, 1997).

Primary sources dominate for high level strategic information while secondary sources dominate for information used in making tactical decisions (Winkler, 1997). If the right mix of information sources is not made appropriately, organisations would likely be faced with a volume of varied business information, which some makes it almost impossible to make sense of it, and often slows down the process of interpretation (Winkler, 1997). Organisations are often inclined to merely depend on information from secondary sources. Although they can still benefit from secondary source information for tactical decisions such as for sales, marketing and operating issues, but they will likely not be effective in dealing with strategic decisions (Winkler, 1997).

The analyse & translate stage, based on the intelligence users' needs, involves analysing the information and translating it into intelligence that can be acted upon. It is in this stage that all relevant information pieces are critically analysed and fitted into a larger and more meaningful whole for the information to be translated into 'actionable information' (Bernhardt, 1994; Kahaner, 1997). The work often deals with conflicting strands of information to find a meaningful pattern within the stream of available data. Organisations need to recognise the inevitable existence of gaps and blind spots and know when to stop analysing. Also, the effectiveness of the work depends on the ability to employ inductive and deductive reasoning, analyse creatively, use alternative thinking, and decide on appropriate analytical techniques.

To communicate & take action is the final stage of the external intelligence capability process. It involves communicating the intelligence product to intelligence users, whose role is to make decisions and take actions in response to the intelligence received. Bernhardt (1994) highlighted that an intelligence product can take on five forms, namely, competitor profile, strategic impact worksheet, situation analysis, periodic intelligence briefing, and special intelligence briefing. One important point to note is that the intelligence or insights need to be communicated in an effective way whereby intelligence users can make appropriate responses in a timely manner, and at the most optimum cost-benefit point. For this stage, quite a number of organisations will likely tend to overlook the need to communicate the insights to users organisation-wide,

but prefer to focus on taking immediate actions, usually done hastily, on those insights which they view as critical (Kahaner, 1997). One potential negative outcome for these organisations is that they will likely not be effective at optimally exploiting external opportunities (Kahaner, 1997).

2.4.3 Importance of Proactive Capabilities: Adaptive Capability, Innovative Capability and External Intelligence Capability

For achieving high organisational performance, proactive capabilities provide organisations with adaptability, innovativeness and the means to continuously make sense of external prospective-changes. Adaptive capability enables organisations to adjust and manage their organisational processes and systems to fit their strategy content in order to effectively derive the desired outcome of strategy implementation (Roth, Schweiger & Morrison, 1991; Homburg, Krohmer & Workman Jr, 2004; Wang & Ahmed, 2007). Innovative capability helps organisations to create innovation-driven growth opportunities through the development of new products and/or markets (Christensen, Raynor & Anthony, 2003; Wang & Ahmed, 2007). External intelligence capability equips organisations with the means to identify, size up and prioritise their external opportunities, and know when to pull out of waning opportunities (Kahaner, 1997; Eisenhardt & Sull, 2001); and to better exploit their resources and strategically manoeuvre organisational processes in a well-timed and ongoing basis (Teece, Pisano & Shuen, 1997; Barney, Wright & Ketchen Jr, 2001; Homburg, Krohmer & Workman Jr, 2004).

Hypothesis Development for Adaptive Capability

For achieving high organisational performance, organisations require adaptive capability to implement strategy and realise the desired outcomes easier and more effectively (Roth, Schweiger & Morrison, 1991; Eisenhardt & Sull, 2001; Hubbard et al., 2002; Christensen, Raynor & Anthony, 2003). Put differently, organisations which employ adaptive capability will likely achieve high organisational performance, including a healthy growth, especially when dealing with volatile external

environmental conditions (Winter, 2003; Wang & Ahmed, 2007). Adaptive capability is expected to be positively associated with performance.

The direct effect of adaptive capability on organisational performance is illustrated in Figure 2.9. Based on the model, it is proposed that the effect be empirically tested. Therefore, it is hypothesised that:

Hypothesis 4 *A higher level of adaptive capability is associated with higher organisational performance.*

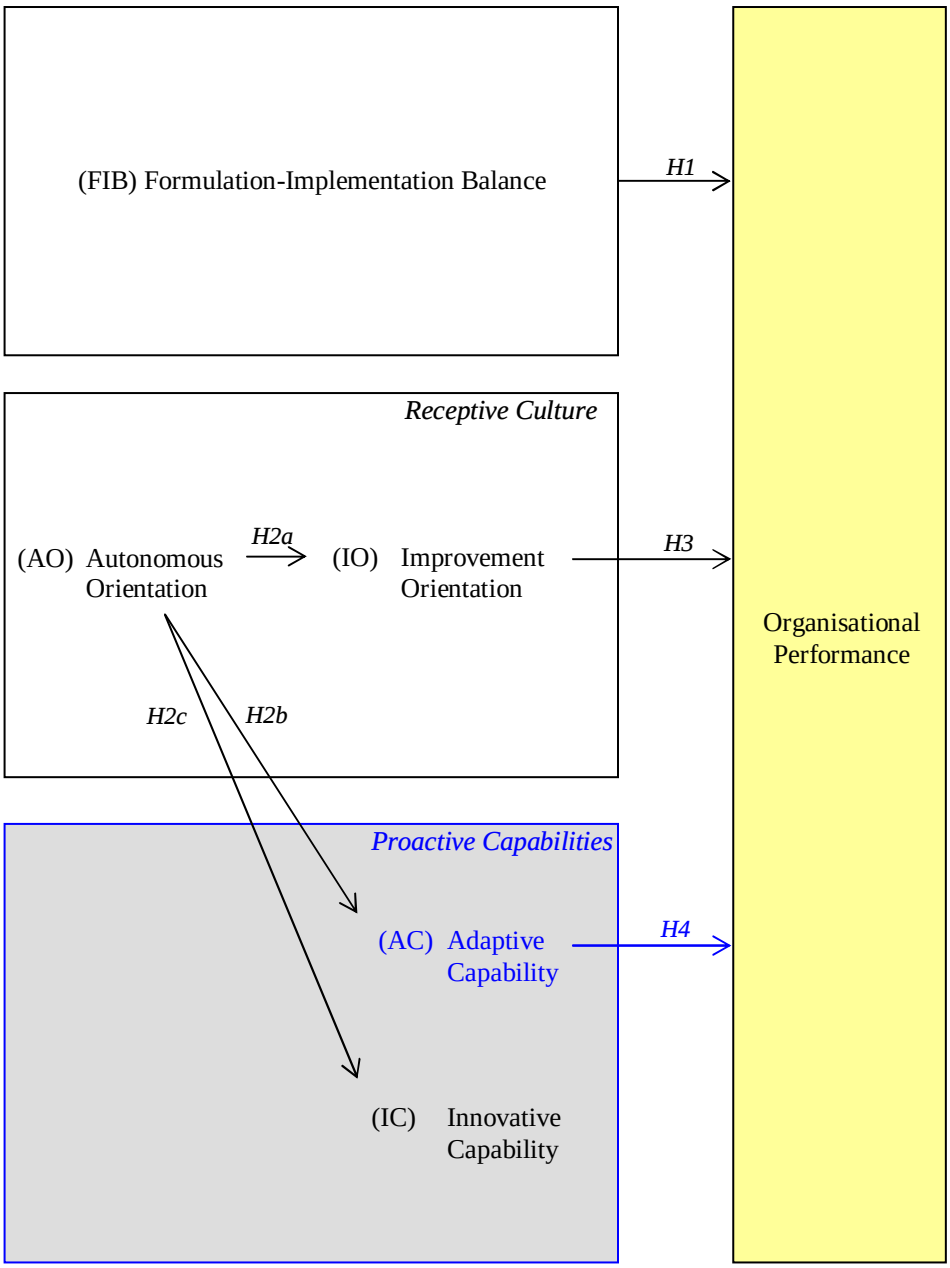

Figure 2.9 'Adaptive Capability' (A Factor of Proactive Capability) for Achieving High Organisational Performance

Measures of Adaptive Capability

Organisations which possess adaptive capability are those that proactively go about integrating their resources to match the constantly changing organisational needs to capitalising on emerging market opportunities (Wang & Ahmed, 2007). They

proactively go about building new resources when required, and reconfiguring resources where appropriate (Wang & Ahmed, 2007). They are adept at linking internal resources advantage to external marketplace-based competitive advantage (Wang & Ahmed, 2007). They swiftly adapt their product-market scope to optimally exploit opportunities in the changing environment (Eisenhardt & Sull, 2001; Hubbard et al., 2002; Wang & Ahmed, 2007). Based on the findings, Figure 2.10 shows the proposed measures of adaptive capability. The more emphasis an organisation places on each of the aspects, the greater will be its adaptive capability (Teece, Pisano & Shuen, 1997).

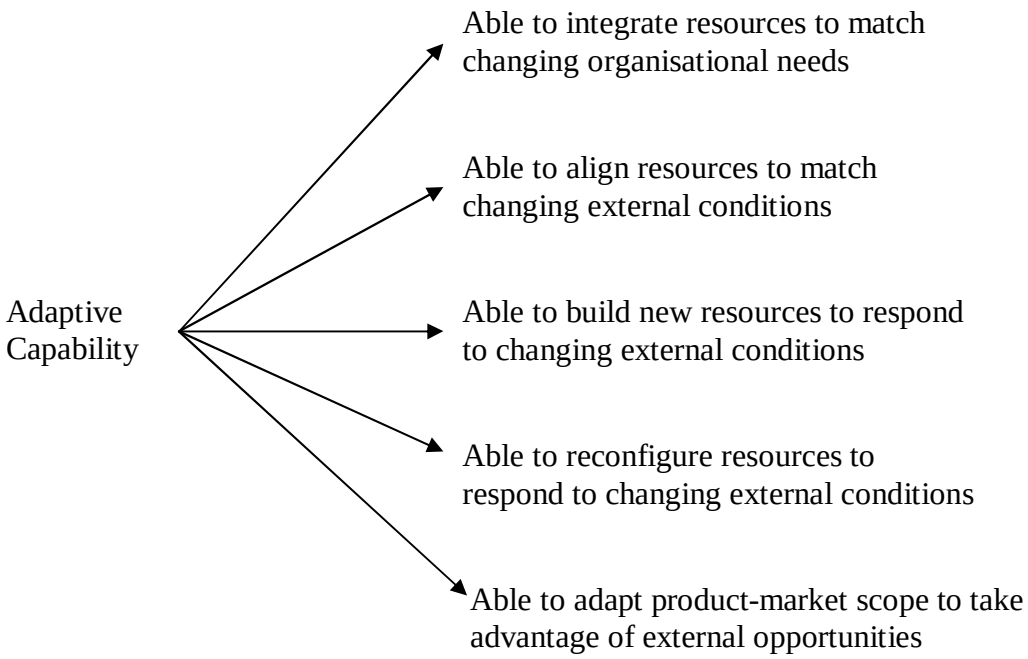

Figure 2.10 Measures of Adaptive Capability

Hypothesis Development for Innovative Capability

Some scholars found that in several industries, innovative capability is a critical variable for organisations to adapt themselves in the light of external competition and change (Tripsas, 1997; Deeds, DeCarolis & Coombs, 2000; Lazonick & Prencipe, 2005). Organisations need innovative capability to enhance their adaptive capability in order to more effectively capitalise on the opportunities brought about by external environmental changes (Eisenhardt & Sull, 2001; Christensen, Raynor & Anthony, 2003; Wang & Ahmed, 2007). Hult and Ketchen Jr (2001) point out that innovative capability also

contributes to an organisation's positional advantage and in turn competitive advantage. So, innovative capability is expected to be positively associated with adaptive capability and organisational performance.

Figure 2.11 illustrates the effect of innovative capability on adaptive capability and organisational performance. Therefore, the associated hypotheses are articulated as follows:

Hypothesis 5a *A higher level of innovative capability is associated with a higher level of adaptive capability.*

Hypothesis 5b *A higher level of innovative capability is associated with higher organisational performance.*

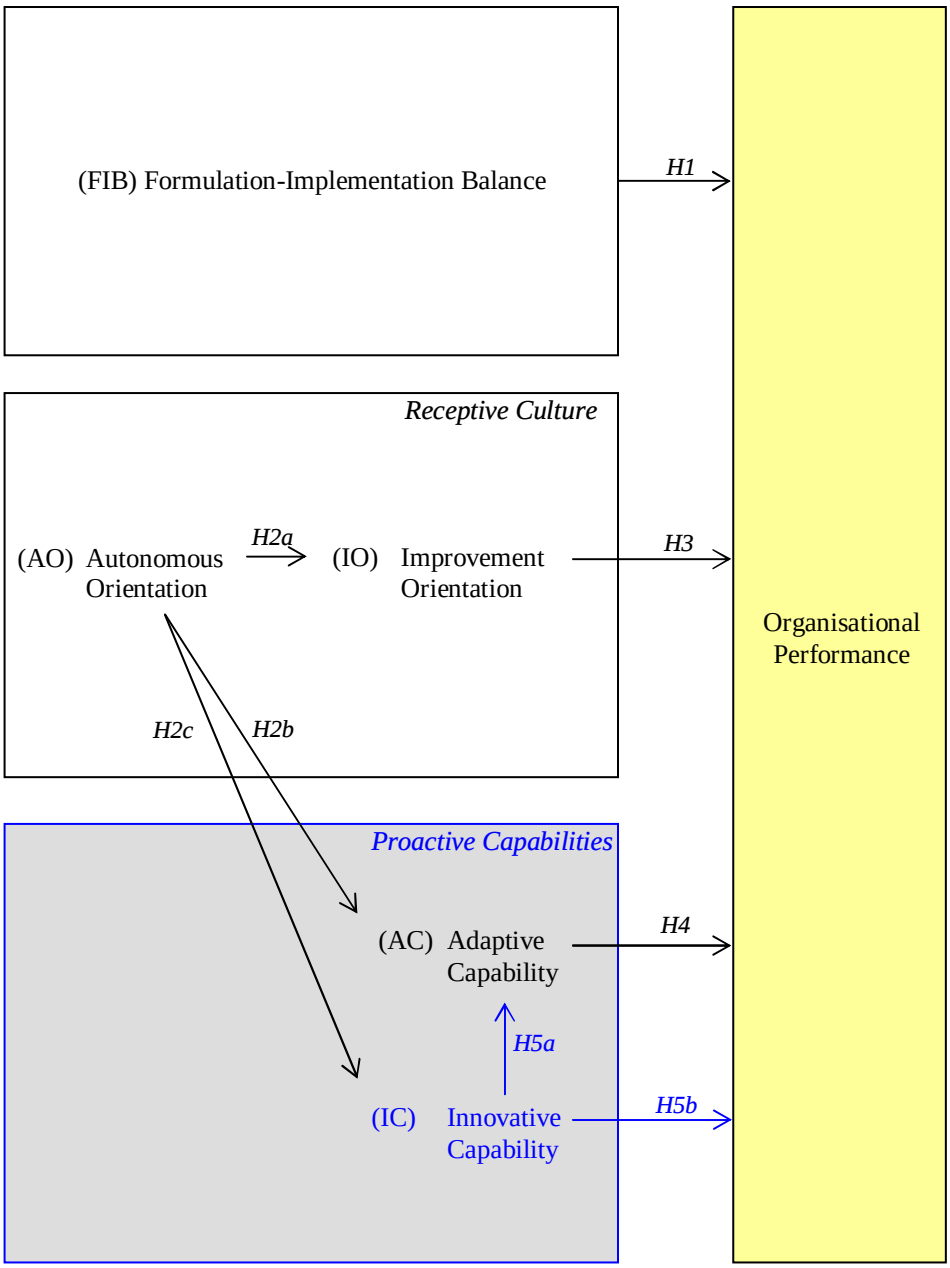

Figure 2.11 'Innovative Capability' (As a Factor of Proactive Capabilities) for Achieving High Organisational Performance

Measures of Innovative Capability

Organisations which possess innovative capability are those that proactively go about developing new products and/or markets to match the changing external market needs (Wang & Ahmed, 2007). They place emphasis on exploring new combinations of different ideas and exploiting new connections between ideas that lead to innovative

approaches to fleeting business issues (Neo & Chen, 2007). They make appropriate adjustments and/or changes to their organisational routines in a timely fashion (Barney, Wright & Ketchen Jr, 2001; Winter, 2003). They view routines, which are day-to-day voluminous and repetitive business activities, as a source of flexibility and change (Feldman & Pentland, 2003). Based on the findings above, Figure 2.12 shows the proposed measures of innovation capability. The more emphasis an organisation places on each of the aspects, the greater will be its innovative capability (Teece, Pisano & Shuen, 1997).

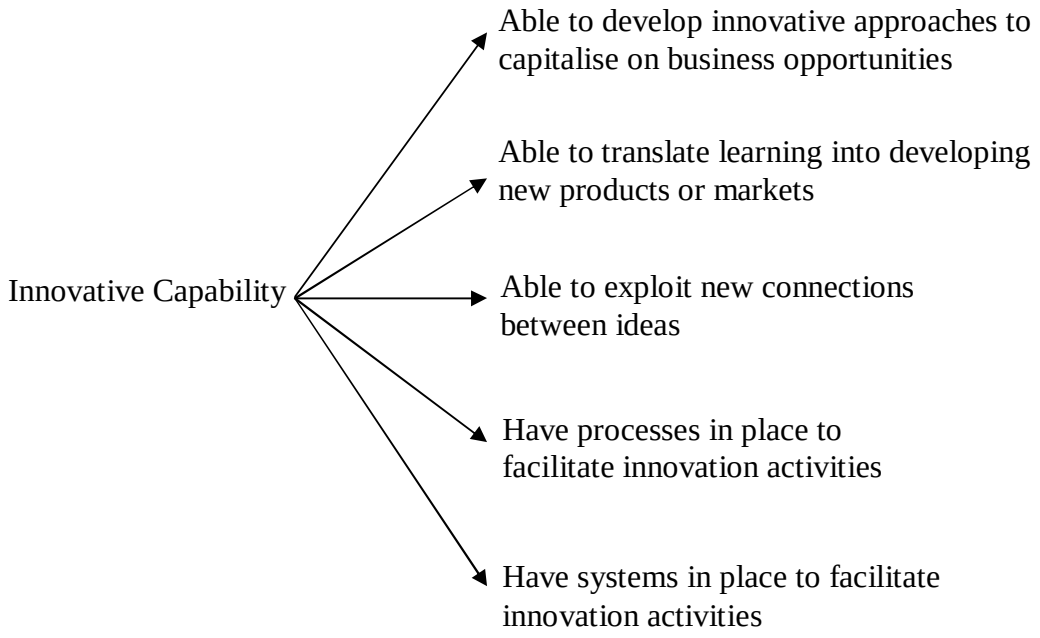

Figure 2.12 Measures of Innovative Capability

Hypothesis Development for External Intelligence Capability

Table 2.5 shows the comparison of organisational aspects relating to external intelligence capability based on a number of important studies (Kohli & Jaworski, 1990; Fuld, 1994; Kahaner, 1997; Homburg, Krohmer & Workman Jr, 2004; Menguc & Auh, 2006). These studies, except for the work by Menguc and Auh (2006), seem only to advocate the need for either customer intelligence or competitor intelligence. The studies suggest that, as long as one of the aspects is employed, organisations can potentially attain a good performance or derive a competitive edge. Besides customer

intelligence, Menguc and Auh (2006) state that organisations need to also gather competitor information, share and discuss it, and react to it. Customer intelligence involves collecting information about customers' changing needs; analysing the information to generate intelligence; delivering the intelligence to users with an organisation; and taking actions in response to the insights drawn about customer needs (Kohli & Jaworski, 1990; Homburg, Krohmer & Workman Jr, 2004). Whereas competitor intelligence involves collecting information about competitors' movements; analysing the information to generate intelligence; delivering the intelligence to users with an organisation; and taking actions in response to the insights drawn about movements of competition (Kahaner, 1997; Homburg, Krohmer & Workman Jr, 2004).

Table 2.5 A Comparison of Some Studies that Relate to External Intelligence Capability

Kohli & Jaworski (1990)	**Kahaner (1996)**	**Homburg, Krohmer and Workman Jr (2004)**	**Menguc & Auh (2006)**
Factors that focus on understanding and anticipating changing customers' needs and preferences			
Intelligence generation	n/a	Generating customer intelligence	Monitoring and assessing customer changing needs and wants
Intelligence dissemination	n/a	Disseminating customer intelligence	Disseminating information throughout the firm
Responsiveness	n/a	Responding to customer intelligence	Revising business strategies in order to enhance customer value + Innovativeness
Factors that focus on anticipating and learning from competitors' actions in order to outperform competition			
n/a	Planning and directing information collection process Collection of information and turning it into usable knowledge Analysis of usable knowledge and turning it into actionable intelligence	n/a	Gathering competitor information
n/a	Disseminating the intelligence to end users	n/a	Sharing and discussing about competitor information
n/a	Suggest possible courses of action to end users	n/a	Reacting to actions by competitors + Innovativeness

The strategic value and usefulness of customer intelligence and competitor intelligence will likely be realised more fully when they are being utilised together. Stated differently, in an increasingly changing and competitive external environment, it may no longer be adequate to employ just customer intelligence or competitor intelligence. Customer intelligence is more than about understanding changing customers' needs and preferences (Kohli & Jaworski, 1990; Homburg, Krohmer & Workman Jr, 2004). It is also about anticipating the shifting customers' needs and preferences. Competitor intelligence is more than about anticipating competitors' movements. It is also about deciphering the strategic intents of competitors' movements and using the understanding to help validate business assumptions made and to help illuminate possible business oversights (Tyson, 1990; Fuld, 1994; Kahaner, 1997). It is thus proposed that external intelligence capability consists of customer intelligence and competitor intelligence.

Clearly, it is important for organisations to be able to generate, disseminate and respond to the information and knowledge gained, or intelligence, pertaining to customers' changing needs as well as competitors' movements (Kohli & Jaworski, 1990; Kahaner, 1997; Homburg, Krohmer & Workman Jr, 2004). Customer intelligence is vital to organisations in drawing insights about who, what, when, where or how customers can be served better (Kohli & Jaworski, 1990; Menguc & Auh, 2006). Competitor intelligence is vital to organisations in validating their interpretations made about environmental changes and trends; spotting new opportunities; learning about other possible ways to optimally exploit opportunities in the changing environment; forecasting future states of the competitive environment; and envisioning the types of organisational configurations for these future environmental states (Fuld, 1994; Kahaner, 1997; Rouach & Santi, 2001; Hubbard et al., 2002).

External intelligence capability shapes the way organisations see and interpret their changing environmental conditions (Kohli & Jaworski, 1990; Kahaner, 1997; Homburg, Krohmer & Workman Jr, 2004). The way organisations make sense of environmental changes influences the way their organisational cultures respond to their external environments (Trompenaars & Hampden-Turner, 1998); the way their product-market scope is adapted to optimally exploit external opportunities (Eisenhardt & Sull, 2001;

Hubbard et al., 2002; Wang & Ahmed, 2007); and the way they go about developing new products and/or markets, and innovative business approaches (Neo & Chen, 2007; Wang & Ahmed, 2007). Put differently, when improvement orientation is complemented by external intelligence capability, organisations will be more effective at sourcing better ways of doing things, and at trying them out.

External intelligence capability can also enhance the employment of adaptive capability and innovative capability to better match volatile external environmental conditions. It is postulated that external intelligence capability is positively associated with improvement orientation, adaptive capability and innovative capability. Successful responses to intelligence gathered can lead to additional value for customers and better competitive positioning, and thereby competitive advantage (Kohli & Jaworski, 1990; Homburg, Krohmer & Workman Jr, 2004). Thus, it is also postulated that external intelligence capability is positively associated with organizational performance.

Figure 2.13 illustrates the effects of external intelligence capability on improvement orientation, adaptive capability, innovative capability and organisational performance. Therefore, it is hypothesised that:

Hypothesis 6a *A higher level of external intelligence capability is associated with a higher level of improvement orientation.*

Hypothesis 6b *A higher level of external intelligence capability is associated with a higher level of adaptive capability.*

Hypothesis 6c *A higher level of external intelligence capability is associated with a higher level of innovative capability.*

Hypothesis 6d *A higher level of external intelligence capability is associated with higher organisational performance*

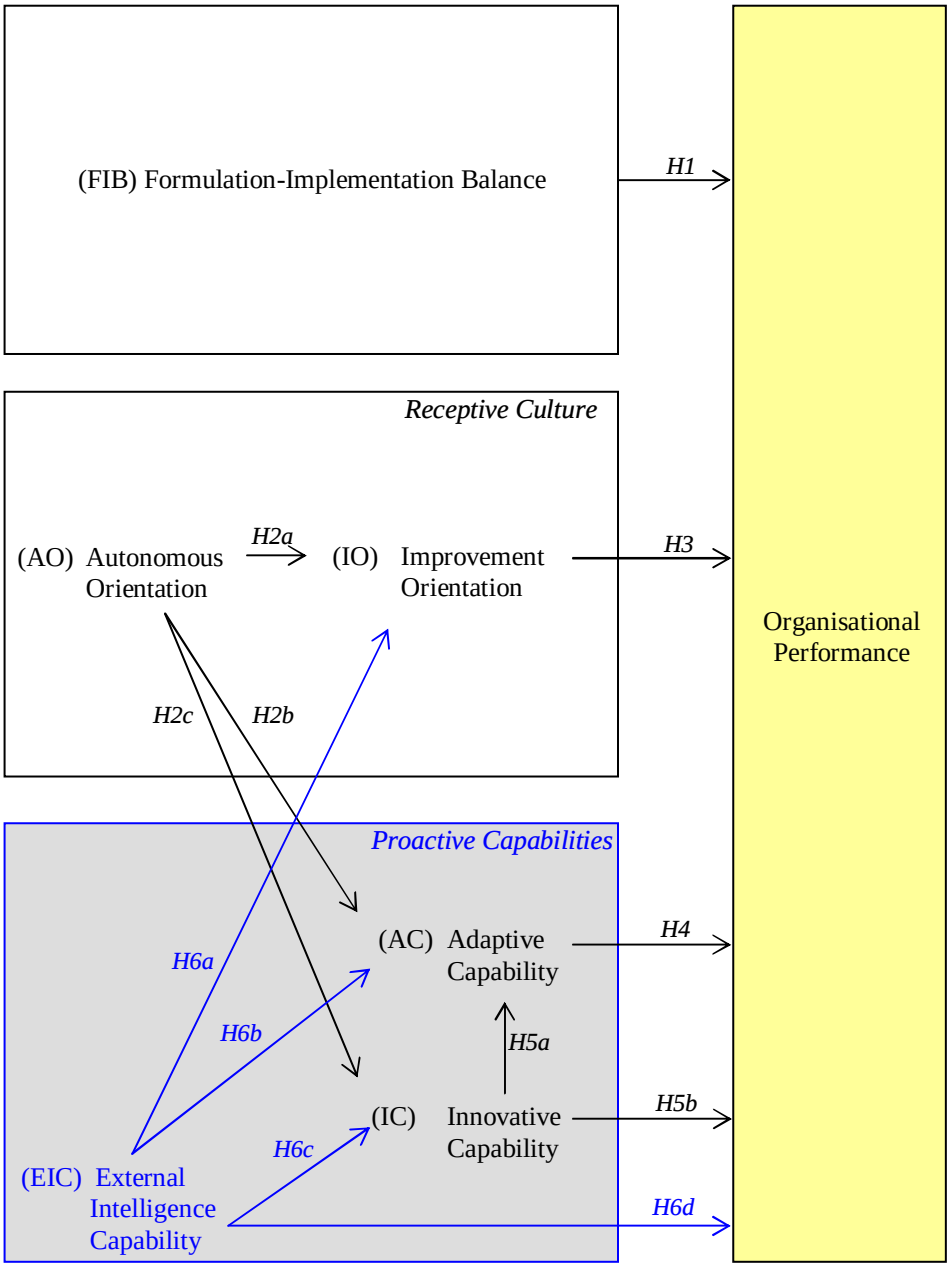

Figure 2.13 External Intelligence Capability (as a Factor of Proactive Capabilities) for Achieving High Organisational Performance

Measures of External Intelligence Capability

External intelligence capability is used by high performance organisations to generate foresights about fleeting and growth opportunities (Bernhardt, 1994; Kahaner,

1997), and to optimally exploit opportunities in the changing environment (Eisenhardt & Sull, 2001; Hubbard et al., 2002). The generated foresights also help to shed light on ways in which changing and growth opportunities can be exploited effectively (Bernhardt, 1994; Kahaner, 1997). Organisations that employ external intelligence capability regularly engage in predicting the future trends and development, and look out for fresh and interesting initiatives implemented by others (Neo & Chen, 2007). Hubbard et al. (2002) pointed out that the organisations do so by focusing on customers and collaborating with other organisations in shaping the future.

To manage high growth, which is part of high organisational performance, it is important that organisations employ external intelligence capability to forecast future states of the competitive environment, envisage the types of organisational configurations for these states, and reconfigure their structure accordingly (Nicholls-Nixon, 2005). Furthermore, organisations need to constantly experiment with appropriate responses based on the intelligence they gather about the changing external conditions (Bartlett & Ghoshal, 1998). Importantly, for the intelligence to be effectively leveraged by the entire organisation, the organisation needs to encourage the sharing of information openly and the informal exchange of information amongst colleagues, and to put in place a structure that can facilitate the sharing (Ghoshal & Kim, 1986).

Based on the findings above, Figure 2.14 shows the proposed measures of external intelligence capability. The more emphasis an organisation places on each of the aspects, the greater will be its external intelligence capability (Kohli & Jaworski, 1990; Homburg, Krohmer & Workman Jr, 2004; Menguc & Auh, 2006).

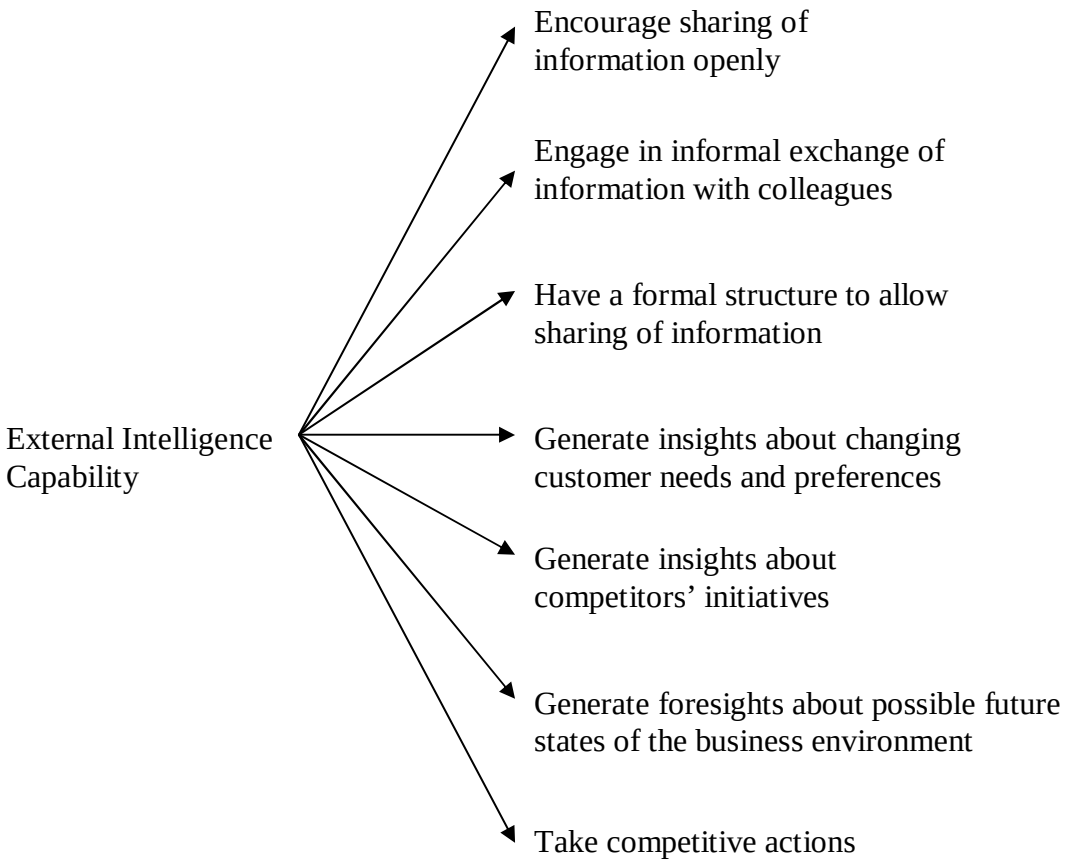

Figure 2.14 Measures of External Intelligence Capability

2.5 Chapter Conclusion

The literature review found that existing studies on high organisational performance, and in particular on the formulation-implementation balance, receptive culture and proactive capabilities, are highly fragmented and mostly anecdotal (Hubbard et al., 2002; Van den Berg & Wilderom, 2004; Wang & Ahmed, 2007). Based on the literature review, the following are research questions that require theoretical and empirical development:

1. Is the formulation-implementation balance important for achieving high organisational performance?
2. Is a receptive culture, consisting of autonomous orientation and improvement orientation, important for achieving high organisational performance?
    a. Does autonomous orientation have an effect on improvement orientation, adaptive capability and innovation capability respectively?

b. Does improvement orientation have an effect on organisational performance?

3. Are proactive capabilities, consisting of adaptive capability, innovative capability and external intelligence capability, important for achieving high organisational performance?
    a. Does adaptive capability have an effect on organisational performance?
    b. Does innovative capability have an effect on organisational performance?
    c. Does external intelligence capability have an effect on organisational performance?

Based on the above research questions, it is thus proposed that high performance organisations differ from others in terms of the emphasis they place on obtaining a formulation-implementation balance, developing a receptive culture and employing proactive capabilities. As discussed in earlier sections, a receptive culture drives employees to commit to their organisations and to perform (Van den Berg & Wilderom, 2004), and also plays a role in efficiently employing available resources in order to achieve organisational goals (Chan, Shaffer & Snape, 2004). Proactive capabilities help organisations create competitive advantages by configuring and reconfiguring resources internally in anticipation of future needs (Sirmon, Hitt & Ireland, 2007), and also helps organisations to effectively capitalise on environmental changes through constantly experimenting with appropriate responses (Bartlett & Ghoshal, 1998).

Within a receptive culture are autonomous orientation and improvement orientation, which are important organisational factors that help organisations to manage themselves at a state of readiness to deal with their dynamic external environmental conditions (Kotter & Heskett, 1992; Chan, Shaffer & Snape, 2004; Nicholls-Nixon, 2005). Within proactive capabilities are adaptive capability, innovative capability and external intelligence capability, which are important organisational factors that help organisations to be adaptive and innovative, and to continuously monitor and make sense of prospective change-patterns brought about by changing external environmental conditions (Hubbard et al., 2002; Christensen, Raynor & Anthony, 2003; Nicholls-Nixon, 2005; Laurie, Doz & Sheer, 2006; Wang & Ahmed, 2007). Figure 2.15 shows the proposed research model for achieving high organisational performance.

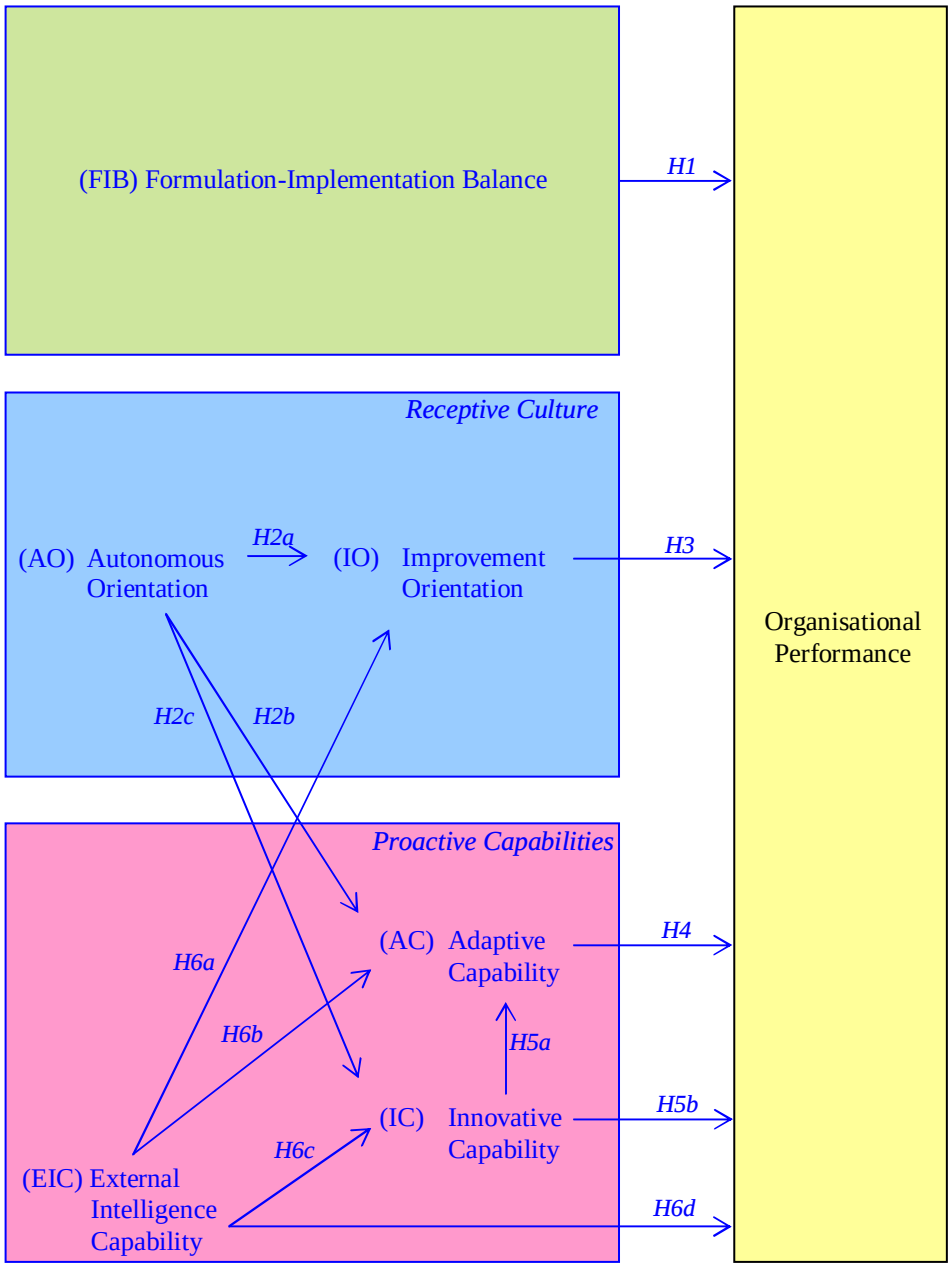

Figure 2.15 Proposed Research Model for Achieving High Organisational Performance

Chapter 3 – Methodology

In the preceding chapter, a research model of high organisational performance (HOP) was developed. It focused on the importance of the formulation-implementation balance, and the strategic implementation roles of a receptive culture and proactive capabilities. Research hypotheses as shown in Table 3.1 were proposed.

For this study, high organisational performance is defined as an above-average performance compared to industry, in terms of sales growth rate, net profit growth rate, growth in sales turnover and the return on equity. This study used a three-year timeframe for its measures. Carton and Hofer (2006) highlighted that empirical research studies about strategy commonly used one-year and three-year timeframes because it was found that after four years, changes in organisational performance would have an effect on the independent factors being measured (Tsai, MacMillan & Low, 1991). Carton and Hofer (2006) further highlighted that a three-year frame is better compared to a one-year timeframe because relative to a one-year timeframe, the information content of a three-year organisational performance measure was considerably higher for better analysis.

The study also used subjective and 'self-reported' measures because objective measures were not easily obtained from organisations in Singapore. Organisations in Asian countries such as Singapore were found, as a result of the interplay between market and political forces of the reporting jurisdiction in their country, to have less incentive to disclose their actual performance data, than would their Anglo-American counterparts (Ball, Robin & Wu, 2003). Nevertheless, senior managers' subjective evaluation of organisational performance was found to be highly correlated with objective measures (Dess & Robinson Jr, 1984).

Table 3.1 Hypotheses Developed for this Study

Formulation-Implementation Balance	
H1	A higher level of emphasis on formulation-implementation balance is associated with higher organisational performance.
Receptive Culture	
H2a	A higher level of autonomous orientation is associated with a higher level of improvement orientation.
H2b	A higher level of autonomous orientation is associated with a higher level of adaptive capability.
H2c	A higher level of autonomous orientation is associated with a higher level of innovative capability.
Proactive Capabilities	
H3	A higher level of improvement orientation is associated with higher organisational performance.
H4	A higher level of adaptive capability is associated with higher organisational performance.
H5a	A higher level of innovative capability is associated with a higher level of adaptive capability.
H5b	A higher level of innovative capability is associated with higher organisational performance.
H6a	A higher level of external intelligence capability is associated with a higher level of improvement orientation.
H6b	A higher level of external intelligence capability is associated with a higher level of adaptive capability.
H6c	A higher level of external intelligence capability is associated with a higher level of innovative capability.
H6d	A higher level of external intelligence capability is associated with higher organisational performance.

This chapter gives an overview of the methods used, the fieldwork and the sampling frame for this study. It also describes the processes used to gather, manage and analyse data for the quantitative survey.

3.1 Method

For this study, a quantitative survey was used. Johnson and Onwuegbuzie (2004:19) highlight the strength of the quantitative method as being 'testing and validating already constructed theories about how phenomena occur', and in 'generalizing the research findings if the data are based on random samples of sufficient size'. Given the outcomes of the literature review, a research model was developed and associated hypotheses were put forward for testing, and in this context the quantitative method was considered

suitable. However, Johnson and Onwuegbuzie (2004:19) concede that one weakness of the quantitative method is 'researcher's theories that are used may not reflect local constituencies' understandings' and the 'focus is on theory testing rather than theory generation'.

The fieldwork began with qualitative interviews of a sample of respondents to confirm their understanding and description of the constructs of high organisational performance (Johnson & Onwuegbuzie, 2004). The findings from the interviews were used to confirm the proposed HOP research model and to improve the design of the research survey questionnaire which was used in the quantitative survey stage. The survey questionnaire was then administered. The findings from the responses to the survey questionnaire were used to test the hypotheses which were developed based on the proposed research model.

3.2 Sampling Frame

The research was focused on organisations based in Singapore. Singapore is an island country generally recognised as a commercial hub for the Asia Pacific region. Singapore houses about 26,000 international organisations[4]. The country was ranked as the most competitive Asian economy[5] by the World Competitiveness Report 2007. Given the relatively progressive and competitive business environment in Singapore, organisations that are based in the country are likely to place greater emphasis on achieving higher performance. Hence, the fieldwork study on organisations in Singapore was expected to offer the selection of a significant sample size to yield significant and interesting insights.

3.2.1 Singapore1000 Listing

The population for this study consisted of organisations listed in the 'Singapore 1000' (S1000). The S1000 was first produced in 2003. It was subsequently produced once every two years. The S1000 productions for 2004/05 and 2006/07 were considered

[4] http://www.edb.gov.sg/edb/sg/en_uk/index/why_singapore/international_headquarters.html
[5] http://www.edb.gov.sg/edb/sg/en_uk/index/why_singapore/singapore_rankings.html

for the study's sampling frame. The qualification criteria used in the S1000 listings were as follows:

- The organisation was registered during the period from 01 June 2003 to 31 May 2007 with the Accounting & Corporate Regulatory Authority (ACRA) as a limited or private limited company;
- The organisation had conducted at least two full years of operation; and
- The organisation's audited financial statements, for the period from 01 June 2003 to 31 May 2007, were available either from ACRA or another reliable financial information source.

Organisations listed in the S1000 were selected based on their audited annual sales turnover figure for the respective production year, i.e. 2003 sales turnover figures for 2002/03 production, 2005 sales turnover figures for 2004/05 production, and 2007 sales turnover figures for 2006/07 production. For each production year, the S1000 listed the top 1000 organisations in terms of annual sales turnover. In terms of general characteristics for the 2004/05 and 2006/07 listings, the organisations had annual sales turnover ranging from S$100 million to S$69 billion. A number of scholars have used the S1000 listing for their studies based on Singapore-based organisations (Wan, Ong & Kok, 2002; Tung & Rieck, 2005; Osman-Gani & Jacobs, 2006; Osman-Gani & Hyder, 2008). The S1000 excludes numerous very small organisations in Singapore, which in terms of their pursuit to perform may have closely resembled private individuals rather than organisations. As of 2007, Singapore had an approximately 130,000 small and medium sized enterprises[6]. Therefore, the S1000 provided a list of pre-selected organisations suitable for this study.

The S1000 is co-produced by DP Information Network Private Limited and Ernst & Young, Singapore. DP Information Network[7] is a leading credit information bureau in Singapore that supplies credit information of organisations to almost 95% and 75% of capital institutions and legal firms in Singapore respectively. It also supplies the credit information to credit and marketing professionals in multinational corporations and

[6] http://sgentrepreneurs.com/entrepreneurship-enterprise/2007/04/17/significance-of-singapore-smes-to-the-economy/
[7] http://www.dpgroup.com.sg/aboutDP.html

small- and medium-sized enterprises. Ernst & Young[8] is a global leader in assurance, tax, transaction and advisory services. Therefore, the S1000 productions were considered reliable given that the authors are established market leaders for their financial-related services.

Some organisations, which were listed in 2004/05 production, were not listed in the 2006/07 production, and some organisations, which were not listed in the 2004/05 production, were listed in 2006/07 production. Therefore, the 2004/05 and 2006/07 productions were merged and consolidated. The consolidated list comprised 1,320 organisations which were used in this study.

The data from the S1000 productions was found to be incomplete. Specifically, the figures were incomplete for sales growth rate, net profit growth rate, sales turnover and return on equity, which were used as measures for organisational performance in this study. In addition, industry averages of sales growth, net profit growth and return on equity, except sales turnover, were not provided. The industry averages were needed as the basis to evaluate the performances of organizations. There was insufficient data to calculate the industry averages. Therefore, as mentioned at the beginning of this chapter, subjective and 'self-reported' measures were used for this study. Some contact details of S1000 organizations such as name of senior manager, business address and telephone number were used in the administration of the survey, although a number of the contact details were found to be obsolete and were discarded.

3.2.2 Target Respondents

The respondents for this study were senior managers from the 1,320 S1000 organisations. For this study, senior managers were defined as executives of sufficient seniority in their respective organisations to comment on their organisations' strategy, cultural orientation, capabilities and performance of their organisations. They also needed to possess management responsibilities and executive power to manage some major aspects of their organisation such as sales, marketing, strategic planning, business development, finance or operations.

[8] http://www.ey.com/SG/en/About-us/About-us_Channel-page

Contact details, which were still valid, from the S1000 productions were manually checked to ensure that the listed contact person fitted the senior manager definition before the details were used for survey administration. Some contact details were purchased from firms that sell credit information, and manually checked to ensure that the contact person fitted the senior manager definition before the details were used for survey administration. For the remaining organisations, business directories were checked and online searches were done to obtain the business addresses. The survey was addressed by name to the senior managers, with respective designation indicated, because a survey would stand a higher chance of obtaining a response if it was directed to the specific attention of individuals in the organisations (Cui, 2003). For some few organisations where a senior manager was not able to be identified, the survey was marked to the attention of the 'Managing Director', because the designation was found to be commonly in use amongst the contact databases for the S1000 listed firms.

3.3 Ethics

Prior to conducting the fieldwork, approval (ISD H-128-2007) for this study was obtained from the University of Adelaide Human Research Ethics Committee. The ethical implications mainly pertained to the issues of the privacy and confidentiality of the information provided. In addition, for interviews, an undertaking was given to obtain participants' informed consent to be interviewed and for the data to be de-personalised in the final report.

3.4 Survey Sample

All of the organisations that were earlier identified were used in the sample to be surveyed. To administer the survey, the online mode was initially considered because internet penetration is established in industrialised countries such as Singapore, whereby internet communication is prevalent among most organisations, and many research firms use online surveys nowadays (Evans & Mathur, 2005). Griffis, Goldsby and Cooper (2004) found that an online survey had a higher response rate than a mail survey, and the quality of data was similar. However, it was not possible to obtain email addresses of senior managers for a large number of the sample organisations.

As an alternative, a mixed-mode survey was considered. Some researchers have recognised that mixed-mode surveys, in which some respondents are surveyed by online questionnaire, some by mail questionnaire, some by telephone, and others by face-to-face interview, or in different combinations of modes, can help increase the response rate (Cui, 2003; Caloghirou, Protogerou, Spanos & Papagiannakis, 2004). So, a mixed-mode survey, namely survey by online questionnaire and survey by mail questionnaire, was finally used in expectation of obtaining a relatively high response rate for this study. Of the 1,320 organisations, 640 organisations were administered the quantitative survey online. The remaining 680 organisations were administered the quantitative survey via mail.

As the S1000 database did not provide information on email addresses of senior managers, for the online survey, individual senior managers known to the researcher and researcher's own contact base, were identified. From these efforts, information such as names, designations and email addresses of senior managers from 166 organizations were obtained. For the remaining organisations, efforts were made to source information of their senior managers from firms that sell credit information. Information of 474 organizations – such as names, designations and email addresses – was purchased from two different sources. For mail mode, senior manager's information – such as names, designations and mailing addresses – were obtained from the S1000 database.

3.5 Development of Measures

The survey questionnaire was developed based on the theoretical constructs and hypotheses, and on the findings of the interviews. However, as pointed out earlier in the conclusion of the literature review chapter, existing studies on high organisational performance, and in particular on the formulation-implementation balance, a receptive culture and proactive capabilities are highly fragmented and mostly anecdotal (Hubbard et al., 2002; Van den Berg & Wilderom, 2004; Wang & Ahmed, 2007). Few related studies have a consistent approach to operationalise the relevant factors. Also, existing scales were found to be unsuitable for this study because they were designed for investigating generalised contexts of organizational culture and capabilities, and not for investigating specific factors associated with high organisational performance. As

pointed out by Carton and Hofer (2006), there are no widely accepted and consistent measurement approaches for organisational performance. Therefore, this study used all the newly generated measures as guided by definitions of the factors, and results from the pretesting of the survey questionnaires, which included the preceding interview findings.

The survey questionnaire was pilot-tested with ten researchers and three senior managers for feedback. The survey was modified after comments were provided by those researchers and senior managers whose work relates to areas such as strategic management, organisational culture and/or dynamic capabilities. The survey was further pre-tested and modified on the basis of responses from graduate students from Master-level degree programs.

All questionnaire measures were operationalised using Likert scales. Likert scales require a minimum of two categories, but it is usually recommended to use four to eight categories for better reliability (Neuman, 2006). Therefore, 5-point Likert scales were used for all the measures in this study. As stated earlier, this study used a three-year time frame for its measures. Senior managers from participating organisations were asked to respond to the questionnaires in terms of their views of how the survey statements applied to their organisations for the period which constituted the three-year timeframe.

3.5.1 Organisational Performance

Based on the literature review findings, the organisational performance factor was operationalised with four measures[9], referenced in Figure 2.1, and consisting of sales growth rate, net profit growth rate, sales turnover and return on equity. As commonly administered in management studies, senior managers were asked to indicate their organisations' performance relative to the competition (Spanos & Lioukas, 2001; Caloghirou et al., 2004; Homburg, Krohmer & Workman Jr, 2004). To minimise potential autocorrelation effects, the measures of organisational performance were

[9] A summary of the measures used to operationalise the organisational performance factor is provided in Appendix A1.

placed in at a different section of the questionnaire relative to organisational culture and organisational capabilities (Caloghirou et al., 2004).

3.5.2 Formulation-Implementation Balance

The formulation-implementation balance was operationalised with eight measures[10], which were referenced in Figure 2.5, reflecting the readiness of organisational posture to deal with an unpredictable environment, regular internal changes, repeated adjustments or changes in approach, the alteration of strategy to fit changing external conditions, the ability to respond on a real-time basis, the possession of an organisational culture that helps to respond to volatile external conditions, the ability to effectively capitalise on external opportunities, and the ability to generate business foresight.

3.5.3 Receptive Culture

For the dimension receptive culture, the measures were generated by adapting items from the Organizational Culture Assessment Instrument (OCAI) developed by Cameron and Quinn (2005) and the theoretical study of dynamic governance by Neo and Chen (2007). OCAI is widely used by managers to conduct comparative assessments between their current and preferred conditions of the culture in their organisations. The outcomes of an OCAI comparative assessment helps managers to identify their organisations' current culture and the culture their organisation should develop in anticipation of the future state of the environment and challenges (Cameron & Quinn, 2005). The OCAI uses four major culture types, namely the hierarchical culture, the market culture, the clan culture, and the adhocracy culture. The market culture and adhocracy culture were of particular importance for this study.

As explained by Cameron and Quinn (2005), the market culture is an organisational form that is oriented toward the external environment instead of internal affairs, and the adhocracy culture is an organisational form that is most responsive to the increasingly

[10] A summary of the measures used to operationalise the formulation-implementation factor balance is provided in Appendix A2.

erratic external environment that typifies the organisational world of the twenty-first century. As discussed earlier in the literature review chapter, in order to achieve high organisational performance, it is important for organisations to manage themselves at a state of readiness that helps in coping with the erratic changing external environmental conditions. Therefore, the measures used for receptive culture were adapted from the market culture and adhocracy culture of the OCAI. However, the OCAI scales based on opposite or competing assumptions were not used in this study because opposite assumption scales require all four cultures be involved. Furthermore, only the organisational culture factors that make up the receptive culture were considered for this study.

The autonomous orientation factor was operationalised with five measures[11], which were referenced in Figure 2.5, involving making own decisions, taking action in making timely changes to the organisation, decision-making processes that primarily decentralised, a willingness to take personal risks, and being self-driven to deal with tasks or problems. The improvement orientation factor was operationalised with five measures[12], which were referenced in Figure 2.7, consisting of actively looking for ways to improve, a keenness to try out new ways of doing things, reviewing of actual ongoing performance data, probing underlying causes of observed outcomes, and implementing new policies or systems.

3.5.4 Proactive Capabilities

The measures for proactive capabilities were generated based on the dynamic capabilities concept devised by Wang and Ahmed (2007) and the theoretical study of dynamic governance by Neo and Chen (2007). The adaptive capability factor was operationalised with five measures[13], which were referenced in Figure 2.10, consisting of the capability to integrate organisation resources, the capability to align organisational resources to changing external conditions, the capability to build new

[11] A summary of the measures used to operationalise the autonomous orientation factor is provided in Appendix A3.
[12] A summary of the measures used to operationalise the improvement orientation factor is provided in Appendix A4.
[13] A summary of the measures used to operationalise the adaptive capability factor is provided in Appendix A5.

organisational resources, the capability to reconfigure organisational resources, and the capability to adapt product-market scope.

The innovative capability factor was operationalised with five measures[14], which were referenced in Figure 2.12, involving the ability to develop innovative business approaches, the ability to translate learning into developing new products or markets, possessing systems to encourage innovative behaviour, possessing processes to facilitate innovation activities and the ability to exploit new connections between ideas. The external intelligence capability factor was operationalised by seven measures[15], which were referenced in Figure 2.14, including the sharing of information openly, the informal exchange of information with colleagues, possessing a formal structure to allow sharing of information, the generation of insights about customers' needs and preferences, the generation of insights about competitors' initiatives, the generation of foresights about possible future states of the business environment, and taking competitive actions.

3.6 Development of Survey Instrument

After all factors had been operationalised, interviews[16] were conducted to confirm the understanding and description of the factors in the proposed HOP research model, and to ensure that questions were understood prior to their use in the quantitative survey. Convenience sampling was used for the interviews because such non-random sampling is better for qualitative study, and is commonly used for pre-testing (Marshall, 1996). Based on the list of 1,320 S1000 organisations, organisations that had one or more of its senior managers known to the researcher were identified. A total of 10 interviews were conducted, which involved 5 organisations. The interviews were conducted in the period from June to July 2008, and were taped-recorded for the purpose of obtaining accuracy in the recording of the data.

The interview findings showed that organisations dealt with the organisational factors differently, which could probably explain the differences in their performance. It

[14] A summary of the measures used to operationalise the innovative capability factor is provided in Appendix A6.
[15] A summary of the measures used to operationalise the external intelligence capability factor is provided in Appendix A7.
[16] A copy of the semi-structured questions is provided in Appendix B1.

was thus concluded that organisational factors – formulation-implementation balance, autonomous orientation, improvement orientation, adaptive capability, innovative capability and external intelligence capability – were expected to have an effect on organisational performance. Also, the interviews showed that all the participants had no problems in understanding the questions and no difficulties in responding to the questions.

Based on the interview findings, a draft of the full survey was produced, and it was then subjected to pretesting. The purpose of the pre-test was to refine the survey and highlight possible problems with the instrument (Cooper & Schindler, 2003). Two rounds of pretesting were conducted for the survey. In the first round, the draft was first pre-tested with four senior managers from different organisations. All four senior managers responded to the survey. In parallel, the draft was also sent to seven academics from the Nanyang Business School, Nanyang Technological University, Singapore, who had experiences in designing questionnaires. Two academics responded to the survey.

The survey was modified based on the comments received. A couple of changes were made to the words used in the response scale to make it easier for participants to understand and to make their responses. Also, those changes were made to prevent participants from finding the response options at the two ends of the response scale as being extremes, and thus avoid them. Efforts were made to ensure that the wording of the items was short and precise. The items in the survey were spaced out more to make it easier for participants to read especially those who may be rushing for time. A few words used in the survey, such as iterative and internal changes, were elaborated to explain their meaning.

There was a suggestion for another response option ‘don’t know’ to be considered for the response scale. However, Gilljam and Granberg (1993) claimed that ‘don’t know’ should not be taken as a response because they found that many respondents who chose the ‘don’t know’ option were actually reluctant to make a response and could introduce false negative biases to the results. Gilljam and Granberg (1993) recommended that ‘don’t know’ should not be included in a response scale. Moreover, the respondents in this study were senior managers who were expected to be able to comment directly on their organisations’ dimensions such as strategy, culture

orientation, capabilities and performance, and thus, it was unlikely that they would not be able to make a response to any of the survey items which were about those dimensions. So, the 'don't know' option was excluded. Separately, the pre-test found that the average time taken to complete the survey was about fifteen minutes and that it was a workable timing for a survey.

In the second round, the revised draft was pre-tested with 82 graduate students whereby 56 graduate students were from the Nanyang Master of Business Administration program and 26 graduate students were from the Master of Science in Technopreneurship and Innovation Program. The programs were offered by the Nanyang Technological University, Singapore. The survey was administered in September 2008. A total of 79 usable responses were collected and analysed. The survey was further modified based on the comments received and findings from the preliminary analysis.

As a preliminary analysis to this study, confirmatory factor analysis was conducted based on the 79 usable responses using LISREL 8.8 structural equation modelling software. The LISREL results validated and confirmed the dimensionality of the factors as proposed in the HOP research model. The Cronbach alpha coefficient, which is one of the most commonly used indicators of internal consistency (Pallant, 2007), for each factor was then calculated using the SPSS software. The acceptable threshold value for Cronbach alpha is 0.60 (Nunnally & Bernstein, 1994; DeVellis, 2003; Pallant, 2007). All the factors, except the autonomous orientation factor, in the proposed HOP model obtained a Cronbach alpha greater than the acceptable threshold value. Cronbach alpha values are sensitive to the number of measures in a scale, and having more measures will result in higher Cronbach alpha values (Pallant, 2007). As the autonomous orientation factor failed to meet the acceptable threshold value of 0.60, two new measures were added to increase its number of measures from three to five. Another issue was that the inter-item correlation matrix indicated a negative value for the measure on organizational decision-making processes. The measure formed part of the autonomous orientation factor. The negative value meant that the item was not measuring the same underlying characteristics of the autonomous orientation factor (Pallant, 2007). The negative value for the measure on organisational decision-making processes was treated by revising the wording of the item's survey question. In general,

further efforts were made to improve the wording of the survey questions to ensure that they were short and precise.

Based on the foregoing development efforts, the survey instrument was finalised for use. The survey[17] consisted of four sections. The first section contained questions on the performance and strategy focus of the organisations. The second section comprised questions on the organisations' culture. The third section comprised questions about the organisations' capabilities. The fourth section sought background information such as respondent's designation, number of years respondent has worked in the organisation, type of industry sectors, number of employees, and others.

3.7 Data Collection Procedure

After the survey had been finalised, data collection was conducted in the period from December 2008 to March 2009 for the sample of 1,320 organizations. The treatment of participating organisations was in accordance to the ethical standards of the University of Adelaide Human Research Ethics Committee. For the data collection, the follow-up procedure took into consideration the year-end holiday period in end December 2008, New Year celebration in early January 2009 and the 15-day Chinese New Year festival at end January 2009. On the whole, the survey was administered to 640 organisations electronically online and administered to the remaining 680 organisations by mail.

For online survey administration, the VOVICI survey software was used to collect the data. The initial email to invite participation was sent out in December 2008. One hundred and seventy five emails generated an error message and were treated as void, thereby reducing the sample pool of potential online participating organizations to 465. With an approximate 4-week interval, the first, second and third reminder emails were sent out respectively in January, February and March 2009. In each email, the purpose of the research was described and the researcher's contact details were provided. The online questionnaire was designed with such features as 'save' and 'resume' so that respondents could stop in the middle of the survey. These features were meant to allow the respondents to complete the survey at their convenience. By end March 2009, 92

[17] A sample of the survey is provided in Appendix B2.

usable responses were received, yielding a response rate of 19.8%. 60 participating organisations declined to participate and 313 participating organisations did not respond.

For survey administration via postal mail, initial letters were sent to invite participation, each with the questionnaire and a self-addressed envelope with return-paid postage, were sent out in December 2008. The cover letters were individually printed, addressed and signed. Four weeks after the initial mailing, the first reminder letters were mailed to non-respondents. Eight weeks after the initial mailing, the second reminder letters, each with a replacement survey and a replacement self-addressed envelope with return-paid postage, were mailed to non-respondents. Letters addressed to 57 organizations were returned by the postal service provider for such reasons as the organisations did not exist and incorrect addresses. After efforts to obtain the updated contact details of these 57 organisations failed, they were treated as void, thereby reducing the pool of potential postal mail participating organisations to 623. By early March, 129 usable responses were received, yielding a response rate of 20.7%. 22 participating organisations declined to participate and 472 participating organisations did not respond. Table 3.2 summarises the above mentioned outcomes of the survey administration.

Table 3.2 Outcomes of the Survey Administration

	Online Mode	**Postal Mode**	**Total**
Number of questionnaires initially sent out	640	680	1320
Minus number of 'void' contacts	*- 175*	*- 57*	*- 232*
Revised sample size after 'void' contacts were omitted	465	623	1088
Number of responses received	152	151	303
Minus number of those declined	*- 60*	*- 22*	*- 82*
Number of usable responses	92	129	221
Number of non-respondents	313	472	785
Response rate	**19.8%**	**20.7%**	**20.3%**

3.7.1 Profile of Survey Respondents and Their Respective Organisations

For this study, there were 221 organisations in the final sample of survey respondents. Table 3.3 presents a detailed description of the demographic profile of the respondents.

It can be seen from Table 3.3 that approximately 87% of the respondents' organisations have been in operation for >10 years. This is consistent with the S1000 database which has approximately 92% of its organizations operating for >10 years. Engineering/Manufacturing (~18%), Trading/Retailing (~13%), and Chemicals/Oil/Gas (~12%) were among the largest type of industry sectors represented in the sample. This is also consistent with the S1000 database whereby among the database's largest type of industry sectors are Engineering/Manufacturing (~26%), Trading/Retailing (~13%), and Chemicals/Oil/Gas (~9.5%).

Table 3.3 Profile of Survey Respondents and their Respective Organisations

Background Information	Information Category	Number of Respondents	%
Number of years respondent has worked for organisation	<3 Years	25	11.31%
	3-5 Years	33	14.93%
	6-10 Years	62	28.05%
	11-20 Years	63	28.51%
	>20 Years	38	17.19%
Number of years the organisation has been in operation	<5 Years	5	2.26%
	5-10 Years	23	10.41%
	11-20 Years	55	24.89%
	21-50 Years	92	41.63%
	>50 Years	46	20.81%
Type of industry sector the organization is most active in	Biomedical Sciences/ Healthcare	6	2.71%
	Chemicals/ Oil/ Gas	26	11.76%
	Construction/ Property/ Real Estates	18	8.14%
	Education Services	0	0.00%
	Electrical/ Electronics	18	8.14%
	Energy/ Environment/ Water	8	3.62%
	Engineering/ Manufacturing	40	18.10%
	Hospitality/ Tourism	3	1.36%
	IT/ Media/ Communications Technology	14	6.33%
	Lifestyle Products & Services	0	0.00%
	Trading/ Retailing	29	13.12%
	Transportation/ Logistics	17	7.69%
	Wholesale	5	2.26%
	Others	37	16.74%
Number of employees in the organization	<10	10	4.52%
	10-19	15	6.79%
	20-99	44	19.91%
	100-500	56	25.34%
	>500	96	43.44%
Type of business entity	Sole Proprietorship/ Partnership	4	1.81%
	Private Limited	132	59.72%
	Government	0	0.00%
	Public	85	38.46%
	Non-Profit	0	0.00%

Some industry sectors, Education Services (0%) and Lifestyle Products & Services (0%) were not represented by any organisations in the sample. This corresponds to the S1000 database's industry sectors breakdown whereby its smallest type of industry sectors are Education Services (0.1%) and Lifestyle Products & Services (0.9%). Approximately 69% of the organisations in the final sample have more than 100

employees and approximately 38% of them are publicly listed organizations. The breakdowns relate to the S1000 database which has approximately 63% of its organisations with more than 100 employees and approximately 30% of them are publicly listed organizations.

The background information, including number of years the organisation has been in operation (organisation age), type of industry sector the organisation is most active in, number of employees in the organisation (organisation size), and the type of business entity, were used as control factors for this study. Effects of the control factors on organisational performance are discussed later in Section 4.4.

3.8 Data Preparation and Assumption Testing

The data was subjected to data preparation and assumption testing prior to being analysed. Checks were made to identify any reverse-coded items and missing values but none were found. Descriptive statistics analysis was conducted using statistical software PASW Statistics 17 to check for errors. The analysis showed that the minimum and maximum values were within the range of possible scores for each measure, and confirmed there were a total of 221 valid responses.

3.8.1 Test for Significant Difference between Responses from Online Survey and those from Postal Mail Survey

An independent-samples t-test was conducted using PASW Statistics 17 to assess whether there was a statistically significant difference between the mean score of 92 usable responses obtained from online survey and the mean score of 129 responses obtained from postal mail survey. If there was a difference between these two groups of survey responses, the data could not be combined into one for further analysis.

To assess the results of the independent-samples t-test, the Sig. value of the Levene's test for equality of variances and associated value of Sig. (2-tailed) were checked (Pallant, 2007). If the Sig. value of the Levene's test for equality of variances was larger than 0.05, equal variances were assumed (Pallant, 2007). Otherwise, equal variances were not assumed. Then the associated Sig. (2-tailed) value was checked. If the value of

the Sig. (2-tailed) was above 0.05, it was concluded that there was no significant difference between the two groups at 95% confidence interval of difference (Pallant, 2007).

Based on the independent-samples t-test results[18], the Sig. values of the Levene's test were found to be larger than 0.05 and associated Sig. (2-tailed) values were above 0.05. It was thus concluded that, at the 95% confidence interval, there was no significant difference between the mean score of responses from the online survey and the mean score of responses from the postal mail survey. In this light, the two sets of responses were combined into a single data set of 221 responses for further analysis.

3.8.2 Test for Significant Difference between Early Responses and Late Responses

Another independent-samples t-test was conducted using PASW Statistics 17 to assess whether there was a statistically significant difference between the mean score of early survey responses and the mean score of late survey responses. If there was a difference between these two mean scores, it would be concluded that the data was significantly biased based on the timing of respective responses.

As data collection was conducted from December 2008 to March 2009, survey responses received during December 2008 and January 2009 were classified as early responses, and survey responses received during February 2009 and March 2009 were classified as late responses. Similarly as explained later in Section 4.7.1, to assess the results of the independent-samples t-test, the Sig. value of the Levene's test for equality of variances and associated value of Sig. (2-tailed) were checked (Pallant, 2007).

Based on the independent-samples t-test results[19], the Sig. values of the Levene's test were found to be larger than 0.05 and the associated Sig. (2-tailed) values were above 0.05. It was thus concluded that, at 95% confidence interval of difference, there was no significant difference between the mean score of responses from early survey responses

[18] T-tests outcome for assessing significance difference between responses from online survey and those from postal mail survey is provided in Appendix C1.
[19] T-tests outcome for assessing significance difference between early responses and last responses is provided in Appendix C2.

and late survey responses. In other words, it was concluded that the data was not biased by the timing of the responses.

3.8.3 Test for Outliers and Normality

The data was then tested for outliers and normality. The application of multivariate analysis, including structural equation modelling (SEM), depends heavily on the assumption of normality. Put simply, structural equation modelling is sensitive to outliers (or extreme observations) and data non-normality (Kline, 2005). Therefore, all measures used in the measurement and structural modelling process were screened for outliers and univariate and multivariate normality. This was done by checking the skewness and kurtosis indices of the measures. Measures with a skew index of above 3 or less than -3, and a kurtosis index of above 10 indicate problems with the data (Kline, 2005; Tabachnick & Fidell, 2007). Based on the checks done, the indices of all the measures were found to be within the acceptable range. Therefore, all the measures were included for subsequent analysis.

3.8.4 Addressing Multicollinearity Problem and Sample Size Requirement

Another important consideration for multivariate analysis was the problem of multicollinearity which does not contribute to a good regression model (Pallant, 2007). Therefore, factors with a bivariate correlation of more than 0.8 in the same analysis indicate a problem with multicollinearity (Diamantopoulos & Siguaw, 2000; Pallant, 2007). For this study, all the factors in the HOP model had a bivariate correlation of less than 0.8 (Diamantopoulos & Siguaw, 2000; Pallant, 2007), and therefore, no problem with multicollinearity. Another assumption of multivariate analysis concerns the issue of sample size. For structural equation modelling, a sample size of at least 200 will be an appropriate minimum (Kelloway, 1998; Marsh, Hau, Balla & Grayson, 1998). For this study, the sample size is 221 which exceeded the minimum requirement.

3.9 Measurement Properties of the Constructs for the HOP Model

This study used confirmatory factor analysis (CFA) to validate and confirm, rather than to explore, the dimensionality of the factors. CFA is suitable in the situations where the dimensionality of a set of factors for a given population is derived from existing studies (Kotter & Heskett, 1992; Cameron & Quinn, 2005; Kline, 2005; Neo & Chen, 2007; Wang & Ahmed, 2007). CFA has also been found useful for examining the extent to which the established dimensionality (or factor structure) of a particular factor fits with a new sample (Kelloway, 1998).

There are several advantages offered by CFA compared to exploratory factor analysis (EFA). One advantage is that CFA offers a mechanism for analysing the goodness of fit of the data, and further provides useful indices that point out the source of model misfit (Kelloway, 1998). Moreover, CFA examines the extent to which the obtained factor structure adequately represents the covariation among items, permits removal of subscales that do not represent a latent construct of interest, and thereby increases the interpretability of the final model (Kelloway, 1998; Diamantopoulos & Siguaw, 2000; Kline, 2005).

Therefore, CFA is an important step to test the validity of the measurement model before proceeding with the structural equation modelling. This two step approach (i.e. to confirm the measurement model before proceeding to confirm the structural model) overcomes the problem of a single step approach (i.e. assessing the measurement and structural models simultaneously) which does not permit the researcher to localise the source of poor model fit if a poor fit situation becomes apparent (Kline, 2005). Once the measurement model is validated, the assessment of the structural model can be performed with greater confidence. Structural Equation Modeling (SEM) software LISREL (version 8.8) was used to conduct the CFA analysis because SEM takes into account measurement error in the measures, resulting in a more accurate estimation of the measurement model.

3.9.1 Measurement Model for the HOP Model

Based on the developed measures as discussed in section 4.3, an evaluation of seven factors was conducted in order to estimate the factor loadings of each measure. The

seven factors were Formulation-Implementation Balance (FIB), Autonomous Orientation (AO), Improvement Orientation (IO), Adaptive Capability (AC), Innovative Capability (IC), External Intelligence Capability (EIC), and Organisational Performance (OP). Retention of measures in the factors was based on the significant factor loadings and goodness of fit indices.

The estimation of the model was without encountering any warning notes in the outputs of LISREL indicating a positive outcome. Put differently, the estimation process of the model was not plagued by syntax errors in the input file, errors in the data file, or incompatibility between data and model. As depicted in Table 3.4, two measures were removed from the measurement scales of the factor FIB due to their weak representation of the data. With the removal of the two measures, the Cronbach's alpha value of the factor FIB increased from 0.74 to 0.78, which meant that the construct of the factor FIB gained better internal consistency. All measures for the other factors were retained. On the whole, as depicted in Tables 3.5 to 3.11 respectively, the factor OP had four measures, the factor FIB had six measures, the factor AO had five measures, the factor IO had five measures, the factor AC had five measures, the factor IC had five measures, and the factor EIC had seven measures.

Table 3.4 Factor Loadings for HOP Measurement Model (contd.)

	Measures	Code	λ
	Organisational Performance		
1	Sales Growth	SGR	0.85
2	Net Profit Growth	NPR	0.89
3	Sales Turnover	STO	0.88
4	Return on Equity	ROE	0.87
	Formulation-Implementation Balance		
5	Ready Posture	SI1	0.52
6	Internal Changes	SI2	-
7	Iterative Approach	SI3	-
8	Alter Strategy	SI4	0.55
9	Real-time Responses	SI5	0.54
10	Responsive Culture	SI6	0.63
11	Capitalise Opportunities	SI7	0.72
12	Business Foresights	SI8	0.69
	Receptive Culture: Autonomous Orientation		
13	Own Decisions	AO1	0.57
14	Timely Action	AO2	0.58
15	Decision-making	AO3	0.47
16	Personal Risks	AO4	0.59
17	Self-driven	AO5	0.64
	Receptive Culture: Improvement Orientation		
18	Improve Ways	IO1	0.71
19	New Ways	IO2	0.66
20	Review Performance	IO3	0.54
21	Probe Causes	IO4	0.56
22	New Policies	IO5	0.59
	Proactive Capabilities: Adaptive Capability		
23	Integrate Resources	AC1	0.80
24	Align Resources	AC2	0.83
25	Build Resources	AC3	0.70
26	Reconfigure Resources	AC4	0.69
27	Adapt Product-Market	AC5	0.51
	Adaptive Capabilities: Innovative Capability		
28	Innovative Approaches	IC1	0.43
29	Translate Learning	IC2	0.63
30	Innovation Systems	IC3	0.89
31	Innovation Processes	IC4	0.91
32	Exploit Connections	IC5	0.74

Table 3.4 Factor Loadings for HOP Measurement Model (contd.)

	Proactive Capabilities: External Intelligence Capability		
33	Share Information	EI1	0.52
34	Information Exchange	EI2	0.44
35	Formal Structure	EI3	0.37
36	Customer Insights	EI4	0.77
37	Competitor Insights	EI5	0.79
38	Environment Foresights	EI6	0.73
39	Competitive Actions	EI7	0.38

Note: 'λ' indicates factor loadings. Substantial and significant factor loadings provide evidence of convergent validity. '-' indicates measures that were removed through the model estimation procedure.

Table 3.5 Confirmed Measures of Organisational Performance (OP)

No.	Measures	Code	Detailed Description
1	Sales growth	SGR	Sales growth rate compared to industry
2	Profit growth	NPR	Net profit growth rate compared to industry
3	Sales turnover	STO	Annual sales turnover compared to industry
4	Return on equity	ROE	Return on equity compared to industry

Table 3.6 Confirmed Measures of Formulation-Implementation Balance (FIB)

No.	Measures	Code	Detailed Description
1	Ready posture	SI1	Organisation upholds a posture that is always ready to respond to unpredictable changing external environment
2	Alter strategy	SI4	Organisation alters strategy to fit changing environmental conditions
3	Real-time responses	SI5	Organisation is able to respond to changing environmental conditions on a real-time basis
4	Responsive culture	SI6	Organisation has an organisational culture that helps in responding to a volatile external environment
5	Capitalise opportunities	SI7	Organisation effectively capitalises on opportunities brought about by changes in the environment
6	Business foresight	SI8	Organisation generates business foresights about future possibilities

Table 3.7 Confirmed Measures of Autonomous Orientation (AO)

No.	Measures	Code	Detailed Description
1	Own Decisions	A01	Organisation favours empowering employees to make own decisions
2	Timely Action	AO2	Organisation favours empowering employees to take action in making timely changes to the company
3	Decision-making	AO3	Decision-making processes are primarily decentralised
4	Personal Risks	AO4	When employees take on tasks of problems, they are primarily willing to take personal risks
5	Self-driven	AO5	When employees take on tasks or problems, they are primarily self-driven to deal with the situations

Table 3.8 Confirmed Measures of Improvement Orientation (IO)

No.	Measures	Code	Detailed Description
1	Improve Ways	IO1	When employees take on tasks or problems, they are (primarily) actively look out for ways to improve
2	New Ways	IO2	When employees take on tasks or problems, they are primarily keen to try out new ways of doing things
3	Review Performance	IO3	Organisation gives regular attention to reviewing actual ongoing performance data
4	Probe Causes	IO4	Organisation gives regular attention to probing underlying causes of observed outcomes
5	New Policies	IO5	Organisation gives regular attention to implementing new policies or systems

Table 3.9 Confirmed Measures of Adaptive Capability (AC)

No.	Measures	Code	Detailed Description
1	Integrate Resources	AC1	In order to capitalise on external opportunities, organisation has the ability to integrate organisational resources to match changing organisational needs
2	Align Resources	AC2	In order to capitalise on external opportunities, organisation has the ability to align organisational resources to changing external environmental conditions
3	Build Resources	AC3	In order to capitalise on external opportunities, organisation has the ability to build new organisational resources to respond to changing environmental conditions
4	Reconfigure Resources	AC4	In order to capitalise on external opportunities, organisation has the ability to reconfigure resources to respond to changing external environmental conditions
5	Adapt Product-market	AC5	In order to capitalise on external opportunities, organisation has the ability to adapt product-market scope to take advantage of external opportunities

Table 3.10 Confirmed Measures of Innovation Capability (IC)

No.	Measures	Code	Detailed Description
1	Innovative Approaches	IC1	In order to capitalise on external opportunities, organisation has the ability to develop innovative approaches to capitalise on business opportunities
2	Translate Learning	IC2	In order to take advantage of external opportunities, organisation has the capability to translate its learning about changing external market needs into developing new products or markets
3	Innovative Systems	IC3	In order to take advantage of external opportunities, organisation has the capability to have systems in place to encourage innovative behavior at all levels of the company
4	Innovative Processes	IC4	In order to take advantage of external opportunities, organisation has the capability to have processes in place to facilitate innovation activities
5	Exploit Connections	IC5	In order to take advantage of external opportunities, organisation has the capability to exploit new connections between ideas

Table 3.11 Confirmed Measures of External Intelligence Capability (EIC)

No.	Measures	Code	Description
1	Share Information	EIC1	In order to take advantage of external opportunities, organisation has the capability to encourage sharing of information openly
2	Informal Exchange	EIC2	In order to take advantage of external opportunities, organisation has the capability to engage in informal exchange of information with colleagues
3	Formal Structure	EIC3	In order to take advantage of external opportunities, organisation has the capability to have a formal structure in place to allow sharing of information
4	Customer Insights	EIC4	Organization regularly analyses customer information and competitor information to generate insights about customer needs and preferences
5	Competitor Insights	EIC5	Organization regularly analyses customer information and competitor information to generate insights about competitors' initiatives
6	Environment Foresights	EIC6	Organization regularly analyses customer information and competitor information to generate foresights about possible future state of the business environment
7	Competitive Actions	EIC7	Organisation emphasises taking competitive actions

3.9.2 Reliability and Validity Assessment

In order to assess the internal consistency of the factors, Cronbach's alpha and composite reliability[20] value were computed for each factor. For Cronbach's alpha ( ), values greater than 0.60 were considered acceptable while values greater than 0.70 were desirable (Nunnally & Bernstein, 1994; DeVellis, 2003; Pallant, 2007). For composite reliability (Pη), values greater than 0.60 are desirable (Kelloway, 1998). As shown in Table 3.12, for all factors, Cronbach's alpha values were well above 0.70. Also, composite reliability values were well above 0.60.

[20] The description of composite reliability, its formula and calculations are provided in Appendix D1.

Table 3.12 Reliability and Validity Assessment for HOP Model

S/No	Description of the Factor	α	Pη	Pvc (η)
1	Organisational Performance (OP)	0.93	0.93	0.93
2	Formulation-Implementation (FIB)	0.78	0.78	0.48
	Receptive Culture			
3	Autonomous Orientation (AO)	0.71	0.71	0.42
4	Improvement Orientation (IO)	0.75	0.75	0.49
	Proactive Capabilities			
5	Adaptive Capability (AC)	0.83	0.84	0.66
6	Innovative Capability (IC)	0.84	0.85	0.68
7	External Intelligence Capability (EIC)	0.77	0.78	0.44

Note: 'α' = Cronbach alpha value; 'Pη' = Composite reliability; 'Pvc (η)' or (AVE) = Average variance extracted

In order to assess the convergence validity of the factors, factor loadings (λ) were evaluated. For factor loadings, values of 0.3 or more were considered to be significant in order to provide substantial and significant evidence of convergent validity (Hildebrandt, 1987; Steenkamp & Trijp, 1991; Giles, 2002). Hair Jr, Black, Babin & Anderson (2006) claim that the ideal cutoff value for factor loadings should be 0.7 based on the rationale that the value corresponds to about half of the variance in the factor being explained by the measure. However, they note that the ideal 0.7 cutoff value criterion is difficult to be met in practice because factor loadings have substantially large standard errors. They further claim that factor loading should be dependent on the sample size for correlations to be statistically significant. They added that a sample size of 350 or greater is required for value of 0.3 or more to be significant, a sample size of 250 or greater is required for the cutoff value of 0.35, whereas a sample size of 200 or greater is required for the cutoff value of 0.4. As the sample size for this study is 221, values close to 0.4 could be accepted. Importantly, factor loadings should be interpreted in the light of theory (Raubenheimer, 2004) and no one particular cutoff value is suitable across all levels of sample size and factor loadings (Shevlin & Miles, 1998). As shown in Table 3.4, the loading of all the measures, except for SI2 (λ = 0.18) and SI3 (λ = 0.19), were significant with values close to 0.4 and more, and above the acceptable cut-off point of >0.30. Items SI2 and SI3 were consequently removed. The convergent validity was also evaluated using Average Variance Extracted[21] (AVE or 'Pvc(η)') values. For Average Variance Extracted ('Pvc(η)'), values greater than 0.50

[21] The description of average variance extracted, its formula and calculations are provided in Appendix D2.

are desirable (Kelloway, 1998). The average variance extracted values for all the factors, except Autonomous Orientation ('Pvc(η)' = 0.42) and External Intelligence Capability '"Pvc(η)' = 0.44), are close to 0.50 value or above. To conclude, the HOP measurement model was confirmed to be reliable and valid.

3.9.3 Goodness of Fit Assessment

Following the removal of the problematic measures as identified earlier, a good HOP measurement model fit was established for the S1000 data. Figure 3.1 presents the HOP measurement model, which is a seven-factor oblique model whereby all the factors therein correlate with each other. Rival models were developed to contrast with the HOP measurement model. The rival models, specified based on literature, were in nested sequence with the HOP measurement model which allowed for the use of direct comparisons with the $\chi^2_{\text{difference}}$ test (Kelloway, 1998).

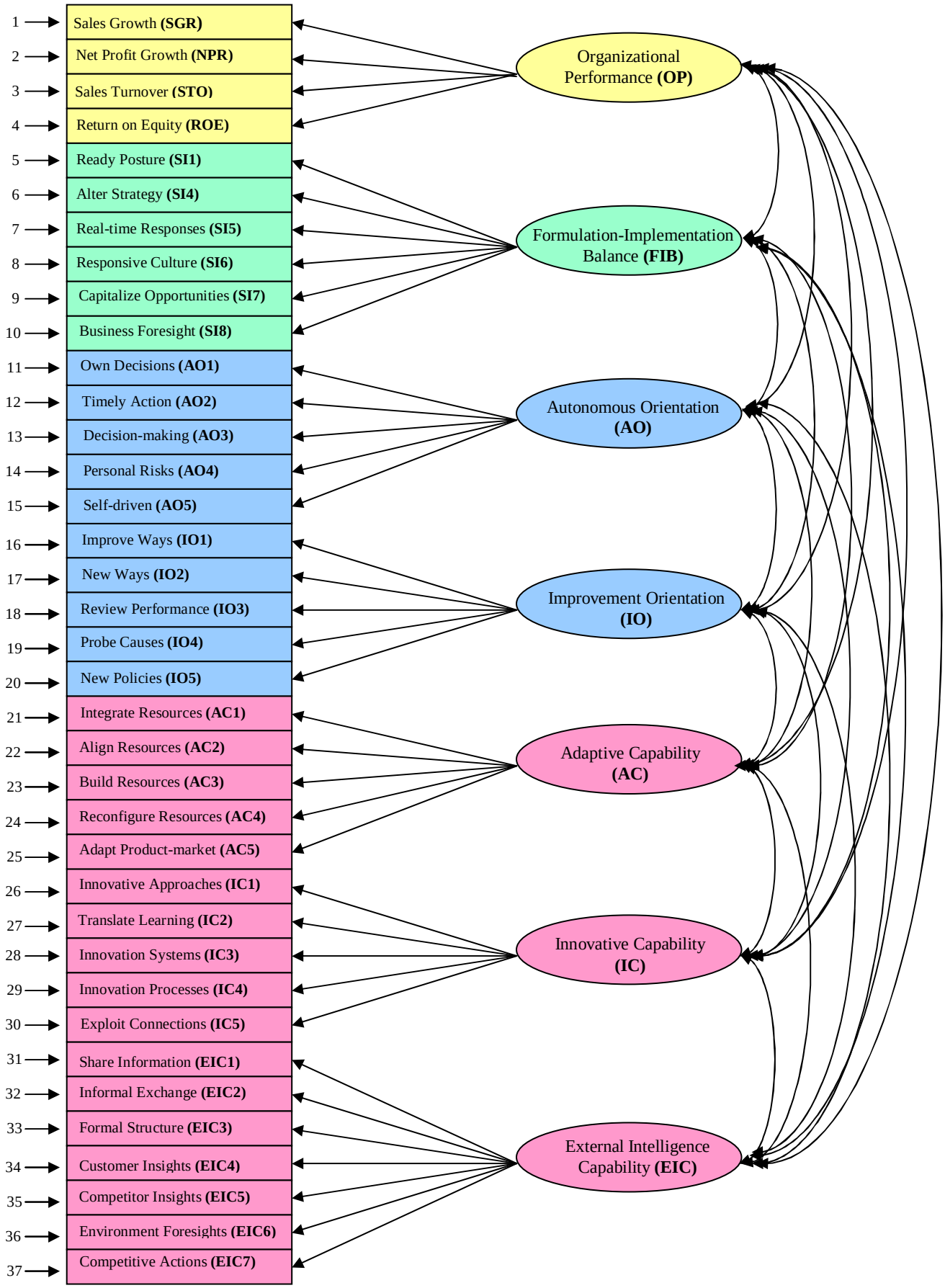

Figure 3.1 HOP Measurement Model

For comparative analysis, rival models also included orthogonal models whereby all the factors therein do not correlate with each other (Kelloway, 1998). A six-factor rival model was obtained by combining the factors autonomous orientation (AO) and improvement orientation (IO). A five-factor rival model was obtained by combining the factors adaptive capability (AC) and innovative capability (IC). A four-factor rival model was obtained by combining factors AC, IC and external intelligence capability (EIC). A three-factor rival model was obtained by combining factors AO, IO, AC, IC and EIC. A two-factor rival model was obtained by combining factors AO, IO, AC, IC, EIC and formulation-implementation balance (FIB), which are all the independent factors. A one-factor rival model was obtained by combining all the factors including the dependent factor Organisational Performance (OP).

Table 3.13 shows the CFA results for the HOP measurement model and its rival models. As shown in Table 3.13, the goodness of fit indices all converge in suggesting the superiority of the HOP measurement model. The HOP measurement model obtained an RMSEA value of 0.080, which is below the 0.10 threshold (Steiger, 1990; Kelloway, 1998; Diamantopoulos & Siguaw, 2000), and therefore, was concluded to provide a good fit to the data. In addition, comparison with the rival models shows that the seven-factor oblique model [RMSEA = 0.080, NFI = 0.88, CFI = 0.93] provides a better fit to the data. Moreover, inspection of the indices of parsimonious fit suggest that the seven-factor oblique model [PGFI = 0.64, PNFI = 0.81] provides the most parsimonious fit to the data. To conclude, it was confirmed that the HOP measurement model was appropriate for use in further data analysis because it provided a good fit to the data and was the better fit model compared to its rival models.

Table 3.13 CFA Results for the HOP Measurement Model and its Rival Models

	Degree of Freedom (df)	**Minimum Fit Function Chi Square (X^2)**	**Root Mean Squared Error of Approximation (RMSEA)**	**Adjusted Goodness of Fit (AGFI)**	**Goodness of Fit (GFI)**	**Expected Cross-validation Index (ECVI)**	**Normed Fit Index (NFI)**	**Comparative Fit Index (CFI)**	**Parsimony Goodness-of-fit Index (PGFI)**	**Parsimony Normed Fit Index (PNFI)**
Criteria		*Smaller X^2 value is better - corresponds to better fit Diamantopoulos & Siguaw (2000)*	*<0.10 good fit <0.05 very good fit <0.01 outstanding fit Steiger (1990)*	*0<AGFI<1 >0.9 good fit*	*0<GFI<1 >0.9 good fit*	*Focuses on overall error between population covariance and model covariance* *Smaller ECVI is better – greatest potential for replication*	*Indicates % improvement cp to null model O<NFI<1 >0.9 good fit Bentler & Bonett (1980)*	*Higher CFI is better- means more parsimonious*	*0<PGFI<1 Higher PGFI is better- means more parsimonious*	*O<PNFI<1 Higher PNFI is better - means more parsimonious James et al (1982)*
	Absolute Fit						*Comparative (Relative) Fit*		*Parsimonious Fit*	
***Oblique Models** (i.e. factors therein correlate with each other)*										
Proposed 7-Factor	608	1429.24	0.080	0.69	0.73	7.55	0.88	0.93	0.64	0.81
6-Factor	614	1461.64	0.081	0.69	0.73	7.67	0.88	0.93	0.64	0.81
5-Factor	619	1602.55	0.090	0.66	0.70	8.60	0.87	0.91	0.62	0.81
4-Factot	623	1711.33	0.092	0.65	0.69	8.88	0.86	0.91	0.62	0.80
3-Fsctot	626	1798.17	0.096	0.64	0.65	9.30	0.85	0.90	0.61	0.80
2-Factor	628	2027.04	0.11	0.60	0.64	10.93	0.81	0.86	0.57	0.77
1-Factor	630	2571.73	0.13	0.54	0.58	13.81	0.79	0.83	0.52	0.75
***Orthogonal Models** (i.e. factors therein do <u>NOT</u> correlate with each other)*										
7-Factor	629	1947.26	0.11	0.59	0.64	11.24	0.84	0.89	0.57	0.79
6-Factor	629	1878.22	0.10	0.62	0.66	10.13	0.83	0.87	0.59	0.78
5-Factor	629	1918.77	0.10	0.62	0.66	10.05	0.83	0.87	0.59	0.78
4-Factot	629	1943.63	0.099	0.63	0.67	9.69	0.84	0.88	0.60	0.79
3-Fsctot	629	1882.37	0.098	0.64	0.68	9.57	0.84	0.88	0.60	0.79
2-Factor	629	2083.50	0.11	0.60	0.64	11.11	0.81	0.85	0.57	0.77

3.9.4 Inter-correlation Assessment

An inter-correlation assessment between all the factors in the HOP model was undertaken to determine whether the proposed relationships between the factors were supported by the data. For the assessment, three issues were examined. First, there should be correlations among all the factors (Diamantopoulos & Siguaw, 2000). Second, the correlations should be significant, indicated by t-values in excess of |1.96| (Diamantopoulos & Siguaw, 2000). Third, there should not be any negative error variances which indicate the existence of unreasonable or improper estimates (Diamantopoulos & Siguaw, 2000).

Table 3.14 shows that there were significant correlations among all the factors. There were strong inter-correlations ($0.5 < r \leq 0.8$, $p < 0.05$) between OP and AO, between AO and AC, between AO and IC, between AO and EIC, between IO and AC, between IO and IC, between IO and EIC, between AC and IC, between AC and EIC, and between IC and EIC. There were weak inter-correlations ($0 < r < 0.3$, $p < 0.5$) between OP and FIB, and between FIB and IC. The remaining inter-correlations were moderate ($0.3 \leq r \leq 0.5$, $p < 0.5$). There were no very strong inter-correlations ($r > 0.8$) that would justify the assumption of a higher-order construct.

Table 3.14 Descriptive Statistics and Factor Inter-correlations

Factor Code	Factor Description	OP	FIB	AO	IO	AC	IC	EIC
OP	Organisational Performance	1.00						
FIB	Formulation-Implementation Balance	0.13	1.00					
AO	Autonomous Orientation	0.53**	0.34**	1.00				
IO	Improvement Orientation	0.46**	0.37**	0.80**	1.00			
AC	Adaptive Capability	0.45**	0.38**	0.54**	0.76**	1.00		
IC	Innovative Capability	0.40**	0.22*	0.55**	0.68**	0.68**	1.00	
EIC	External Intelligence Capability	0.40**	0.34**	0.56**	0.74**	0.61**	0.58**	1.00

*Note: *Correlation is significant at p < 0.05. **Correlation is significant at p < 0.01*

Figures 3.2 to 3.8 show the factor structures for OP, FIB, AO, IO, AC, IC and EIC respectively. All of the measures obtained t-values greater than |1.96| which means that they are all significantly different from zero at p > 0.05, two-tailed; or greater than |2.58| at p > 0.01, two-tailed. The squared multiple correlations (R^2) of the measures are mostly moderate to high, with thirty-two measures ranging from 0.30 to 0.83, whilst another seven measures ranged from 0.13 to 0.29. None of the error variances are negative which revealed the absence of any unreasonable or improper estimates. Therefore, it was confirmed that the proposed theoretical relationships between the factors are supported by the data.

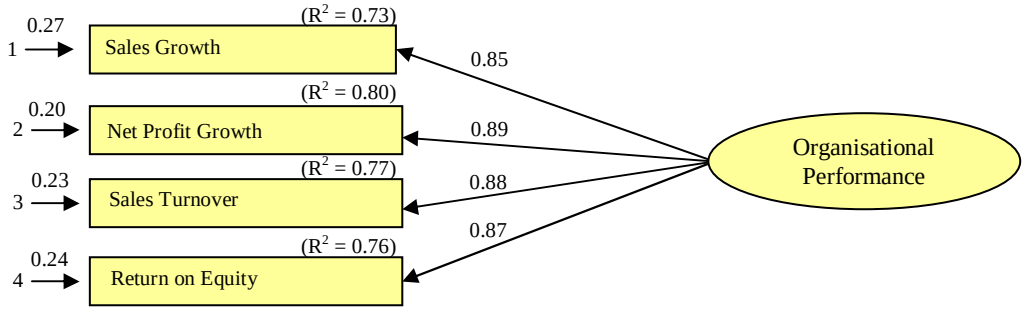

Figure 3.2 Factor Structure for Organisational Performance

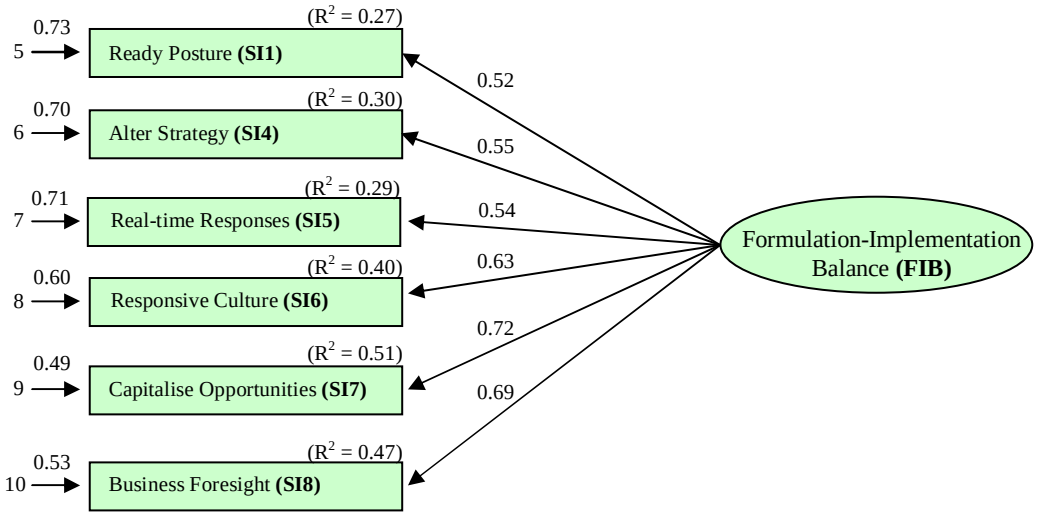

Figure 3.3 Factor Structure for Formulation-Implementation Balance

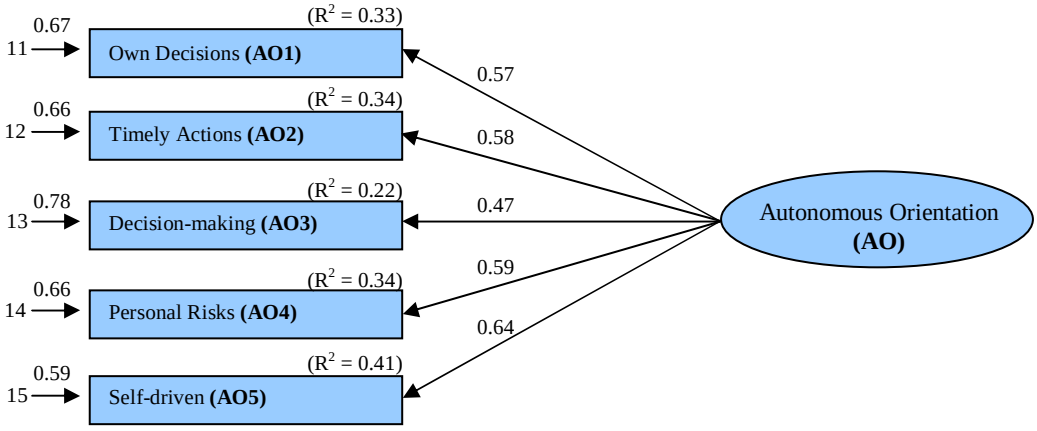

Figure 3.4 Factor Structure for Autonomous Orientation

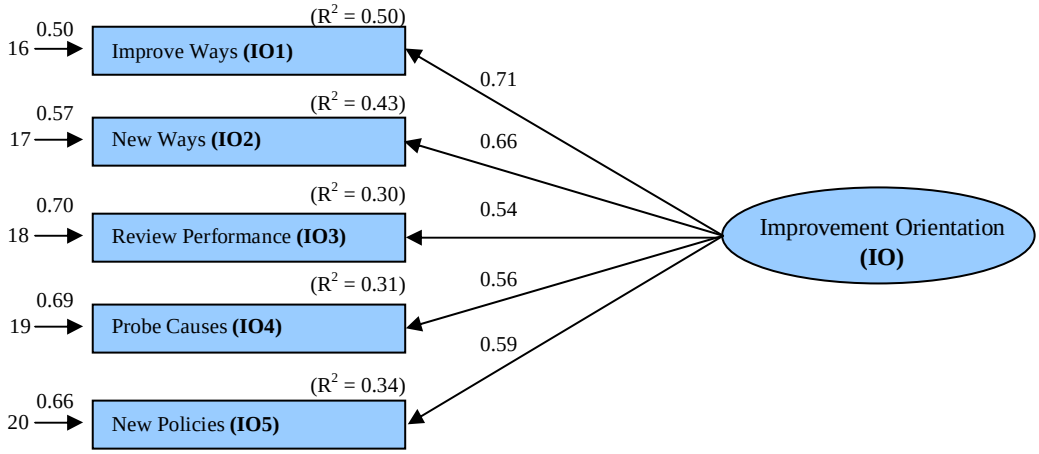

Figure 3.5 Factor Structure for Improvement Orientation

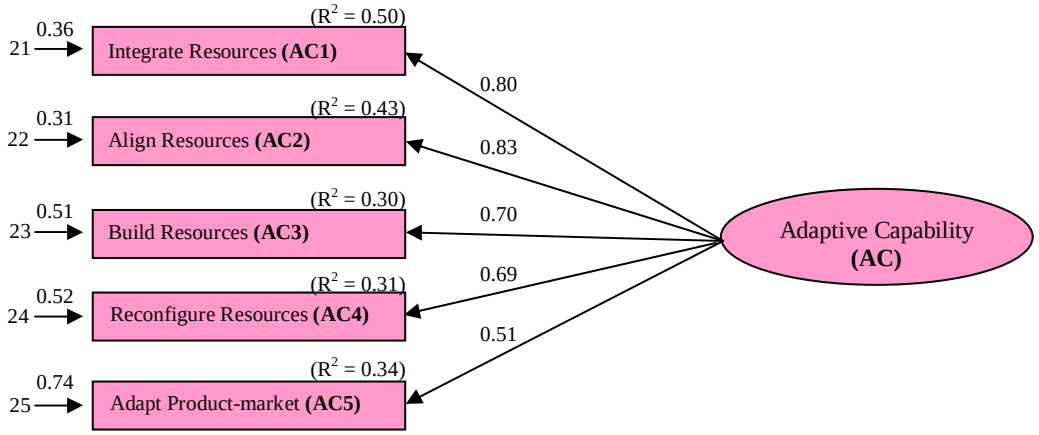

Figure 3.6 Factor Structure for Adaptive Capability

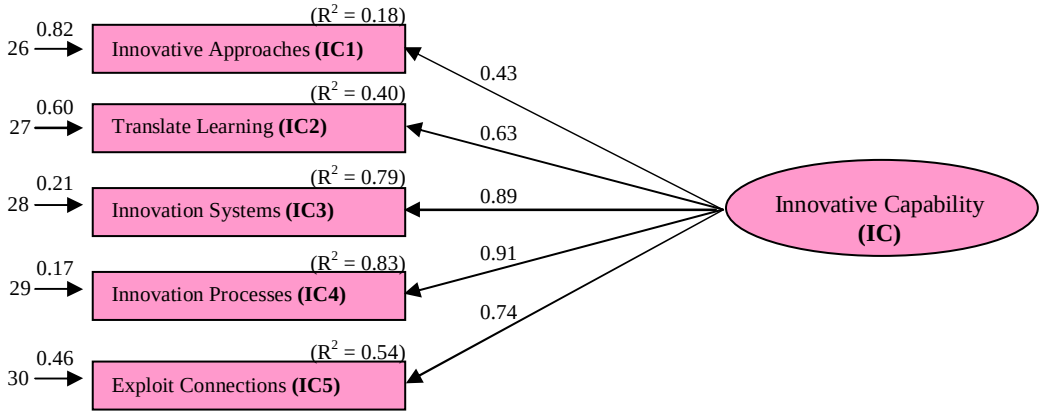

Figure 3.7 Factor Structure for Innovative Capability

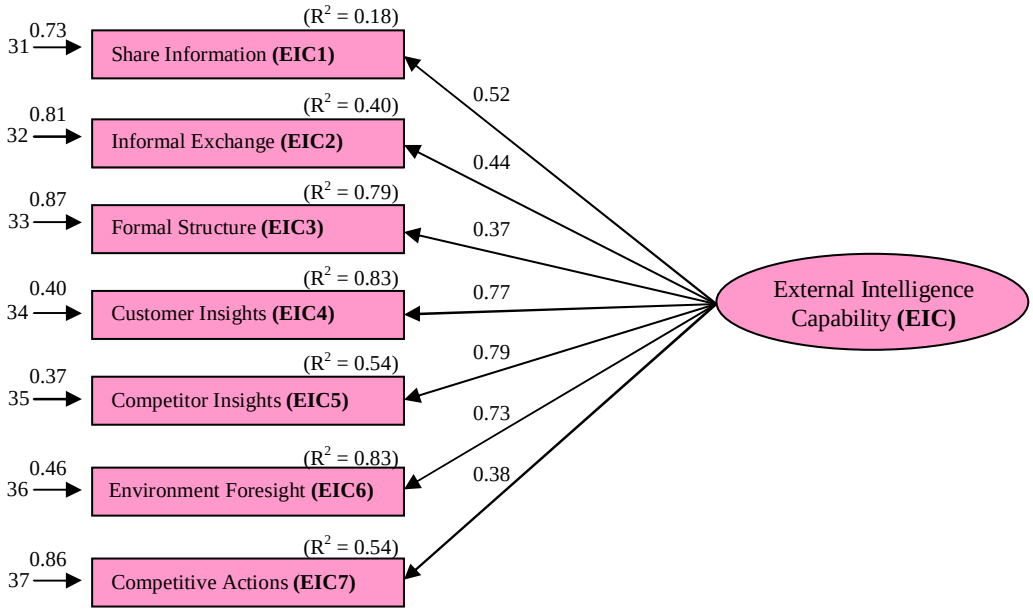

Figure 3.8 Factor Structure for External Intelligence Capability

3.10 Chapter Conclusion and Implications

For this study, a survey instrument which used all newly generated items was developed and pre-tested. This was done because the existing literature related to high organisational performance is highly fragmented and does not provide any widely accepted approaches to operationalise the factors. Moreover, existing the literature relating to the formulation-implementation balance, receptive culture and proactive capabilities for achieving high organisational performance, is mostly anecdotal.

From the analyses conducted, several important conclusions were made. First, the data was suitable to be used for further analysis because the assumption tests showed that the data was not biased by the mode of survey administration or by the timing of the responses, and there were no problems with outliers, data non-normality or multicollinearity. The survey obtained a response rate of 20.3% constituting 221 usable responses, which exceeded the structural equation modelling guide for an appropriate minimum sample size of 200 responses.

Second, the factors – organisational performance (OP), formulation-implementation balance (FIB), autonomous orientation (AO), improvement orientation (IO), adaptive capability (AC), innovative capability (IC), and external intelligence capability (EIC) – and their measures were suitable for use in subsequent model testing. Significant factor loadings and the convergent validity of the studied factors established that the factors were valid. The results of the convergent validity assessment and the internal consistency assessment showed that the measurement properties of the factors were valid and reliable.

Last, the HOP measurement model was suitable for subsequent model testing because it was confirmed, through CFA, to meet the requirement of a good model fit, and was a better fit model compared to its rival models.

Chapter 4 – Results and Findings

Following the confirmation of the measurement model, the main hypotheses were tested. For ease of reference, the hypotheses developed for this study are shown again in Table 4.1. Finally, the effects of control factors on the dependent factor organisational performance were examined. The control factors included organisation age, type of industry sector in which the organisation was most active, organisation size, and type of business entity.

4.1 Using Structural Equation Modelling for Hypotheses Testing

For this study, Structural Equation Modeling (SEM) was used in testing the hypotheses because it offered important advantages compared to other commonly used techniques. The most important advantage is that SEM provides a unique analysis that simultaneously considers both questions of measurement and prediction (Cliff, 1983; Kelloway, 1998). SEM also takes into account measurement error in the observed variables to produce a more accurate estimation of the measurement model (Kelloway, 1998). Furthermore, it allows for the specification and testing of complex predictive models that incorporate the understanding of sophisticated phenomena (Kelloway, 1998).

SEM software LISREL (version 8.8) was used to conduct the covariance structure analyses. The term LISREL is an acronym for LInear Structural RELationships. Covariance structure analysis is a multivariate statistical technique which combines confirmatory factor analysis and econometric modelling for the purpose of analysing hypothesised relationships among factors which are gauged by their measures (Diamantopoulos & Siguaw, 2000). LISREL is a popular and widely available software package for structural equation modelling because it offers an impressive array of facilities for data analysis, including indirect and total effects and their standard errors; direct specification of mean parameters; an option for handling covariance and correlation matrices that are not positive-definitive; and modification indices for all iterative estimation methods (Kelloway, 1998).

Table 4.1 Hypotheses Developed for this Study

Formulation-Implementation Balance	
H1	A higher level of emphasis on formulation-implementation balance is associated with higher organisational performance.
Receptive Culture	
H2a	A higher level of autonomous orientation is associated with a higher level of improvement orientation.
H2b	A higher level of autonomous orientation is associated with a higher level of adaptive capability.
H2c	A higher level of autonomous orientation is associated with a higher level of innovative capability.
Proactive Capabilities	
H3	A higher level of improvement orientation is associated with higher organisational performance.
H4	A higher level of adaptive capability is associated with higher organisational performance.
H5a	A higher level of innovative capability is associated with a higher level of adaptive capability.
H5b	A higher level of innovative capability is associated with higher organisational performance.
H6a	A higher level of external intelligence capability is associated with a higher level of improvement orientation.
H6b	A higher level of external intelligence capability is associated with a higher level of adaptive capability.
H6c	A higher level of external intelligence capability is associated with a higher level of innovative capability.
H6d	A higher level of external intelligence capability is associated with higher organisational performance.

4.2 Model Specification

As required in SEM, the HOP research model was specified prior to conducting the model estimation (Kelloway, 1998; Diamantopoulos & Siguaw, 2000). For the practicality of model estimation, the HOP research model was specified as two separate structural models. For simplicity, the two models were termed as Model 1 (minor) and Model 2 (major). These models were specified based on the respective theoretical frameworks that outlined the direct and indirect effects of the factors on organisational performance. Detailing the hypotheses were: (a) Model 1 on the formulation-implementation balance for achieving high organisational performance, and (b) Model 2 on the receptive culture and proactive capabilities for achieving high organisational performance. See Figures 4.1 and 4.2.

Model 1 was concerned with Hypothesis 1 while Model 2 was concerned with the remaining hypotheses. Model 1 comprised two factors. The factors were (i) FIB as the independent factor and (ii) OP as the dependent factor. As established through CFA analysis in the earlier section 3.9, the FIB factor comprised six measures, and the OP factor comprised four measures.

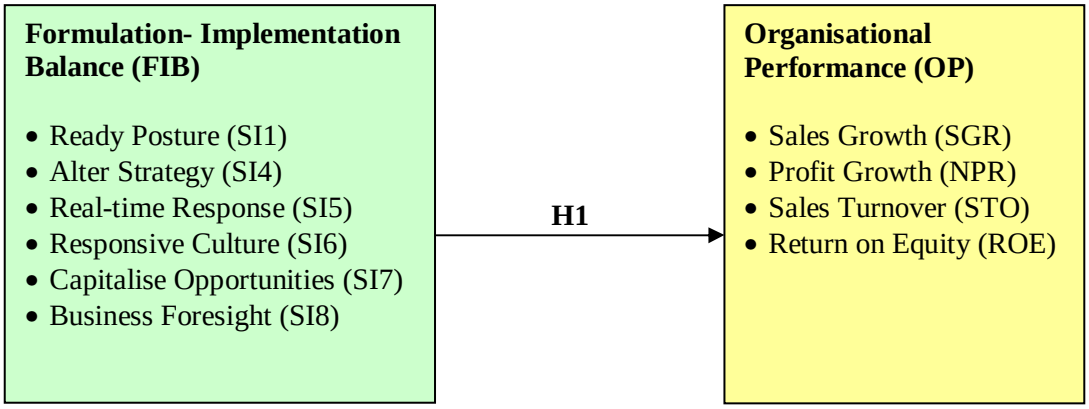

Figure 4.1 Conceptual Framework of Model 1 (*Minor*)

Model 2 comprised six factors. The factors were (i) AO and EIC as the independent factors, (ii) IO, AC and IC as the mediating factors, and (iii) OP as the dependent factor.

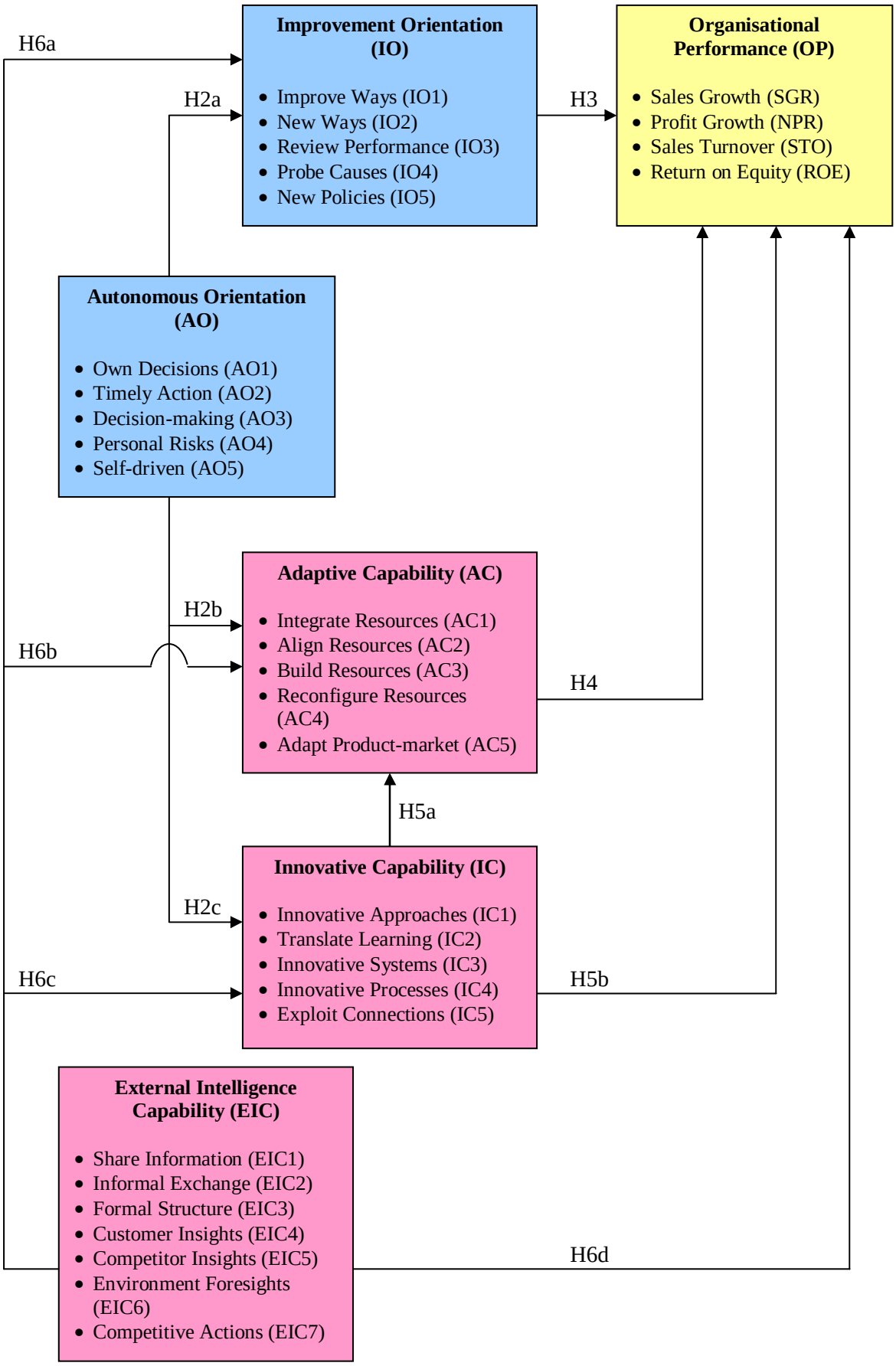

Figure 4.2 Conceptual Framework of Model 2 (*Major*)

4.3 Model Assessment

The model assessment was conducted to evaluate the extent to which the hypothesised models 'fit' or adequately describe the sample data (Kelloway, 1998). For this study, the model fit was evaluated by examining several goodness of fit indices (Bentler & Bonett, 1980; James, Mulaik & Brett, 1982; Steiger, 1990; Kelloway, 1998; Diamantopoulos & Siguaw, 2000). The indices used for the model assessment included: Minimum Fit Chi Square (^{2}), Root Mean Squared of Approximation (RMSEA), Adjusted Goodness of Fit Index (AGFI), Goodness of Fit Index (GFI), Expected Cross-validation Index (ECVI), Normed Fit Index (NFI), Comparative Fit Index (CFI), Parsimony Goodness of Fit Index (PGFI) and Parsimony Normed Fit Index (PNFI).

4.3.1 Assessment for Model 1

Model 1 was concerned with Hypothesis 1.

Hypothesis 1 – Testing the direct effect of formulation-implementation balance on organisational performance

Figure 4.3 shows the model estimation of Model 1. The LISREL results indicated that the direct effect of 'Formulation-Implementation' (FIB) on 'Organizational Performance' (OP) obtained a t-value of 1.64 that was less than the threshold |1.96| which meant that the effect was insignificant. The LISREL results also indicated a poor model fit, with RMSEA = 0.12 that was greater than the threshold value of 0.10. The other absolute fit indices were ^{2} (*df* = 34, *N* = 221) = 140.60, p = 0.00; GFI = 0.89; and EVCI = 0.83.

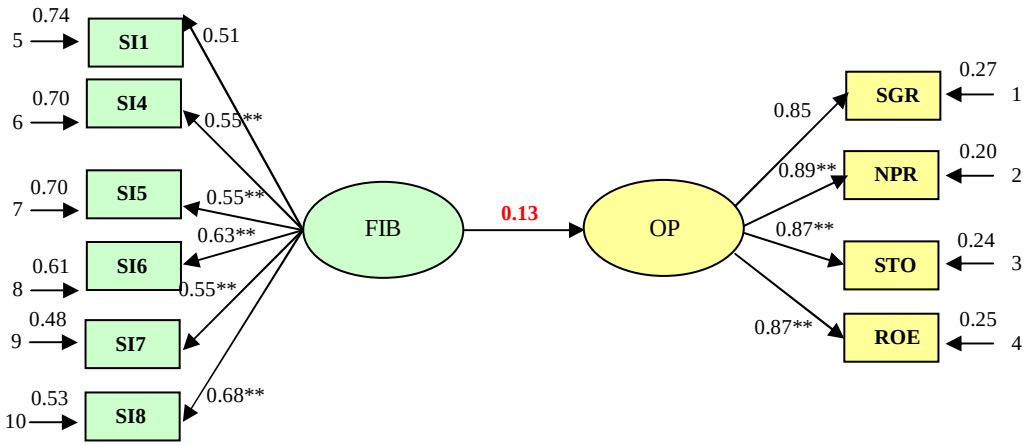

Figure 4.3 Equation Model Showing Standardised Coefficient Estimates for Model 1 (*Minor*)

*Note: *Significant at p < 0.50. **Significant at p < 0.01. Non-significant standardised coefficient estimate is highlighted in **Red***

As an important step in the SEM technique, one or more rival models should be specified and estimated in order to generate the best fit model (Lee & Hershberger, 1990; MacCallum, Wegener, Uchino & Fabrigar, 1993; Chin, 1998; Kelloway, 1998). Rival models are models which are equivalent in terms of the overall model fit to the sample data, but may produce substantially different explanations of the data (Chin, 1998). Importantly also, the specification of rival models needed to be guided by literature (Lee & Hershberger, 1990; Kelloway, 1998). However, for Model 1, no plausible rival model could be identified from the literature. Moreover, Model 1 involved only two factors and thus, no plausible rival models could be generated by omitting any factors or paths (Kelloway, 1998). Therefore, it was concluded that Hypothesis 1 was not supported.

4.3.2 Assessment for Model 2

Similarly, as an important step in the SEM technique to generate the best fit model (Lee & Hershberger, 1990; MacCallum et al., 1993; Chin, 1998; Kelloway, 1998), a

rival was specified for the assessment of Model 2. For simplicity, the original Model 2 was renamed as the 'Comprehensive-2' model and the rival model was termed as the 'Parsimonious-2' model. Parsimonious-2 model was specified as a variant version of Comprehensive-2 model by omitting the paths pertaining to the direct effect of innovative capability on organisational performance (Hypothesis 5b) and the direct effect of external intelligence capability on organisational performance (Hypothesis 6d). It is important to note that the way Parsimonious-2 model was specified meant that it was a nested model within the Comprehensive-2 model. Importantly also, the specification of the Parsimonious-2 model was guided by the literature. In the Comprehensive-2 model, as discussed in section 2.4, it was hypothesised (Hypothesis 5b) that a higher level of innovative capability was associated with better organisational performance based on Hult and Ketchen Jr's (2001) assertion that innovative capability contributes to an organisation's positional advantage. However, Tripsas (1997) argued that innovative capability, as a critical variable for survival in the light of external competition and change, needed to be mediated by adaptive capability. Implicit in that argument, innovative capability would not have a direct effect on organisational performance.

It was also hypothesised in the Comprehensive-2 model (Hypothesis 6d) that a higher level of external intelligence capability was associated with better organisational performance based on the assertion by Kohli and Jaworski (1990) and Homburg, Krohmer and Workman Jr (2004) that successful responses to intelligence gathered can lead to competitive advantage. However, Menguc and Auh (2006) argued that external intelligence capability in isolation, was unlikely to generate superior competitive advantage. Implicit in that argument was external intelligence capability would not have a direct effect on organisational performance. So, for Parsimonious-2, the paths pertaining to hypotheses 5b and 6d were omitted, and thereby the hypotheses were eliminated from the model. Figure 4.4 shows the conceptual framework of the Parsimonious-2 model.

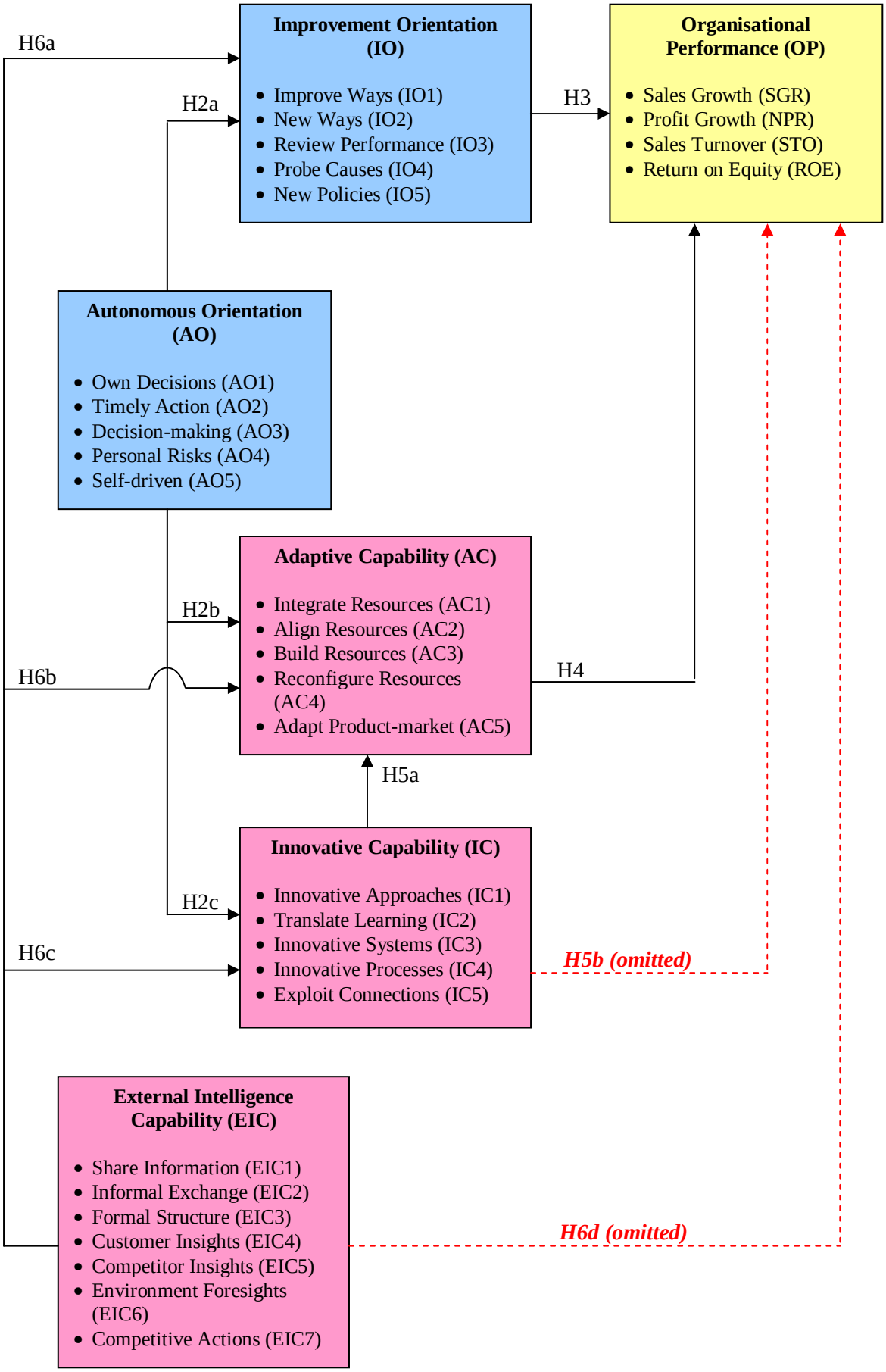

Figure 4.4 Conceptual Framework of Parsimonious-2 Model (*Major*)

As the Parsimonious-2 model was a nested model within the Comprehensive-2 model, the difference between the two models could be tested with the $\chi^2_{difference}$ test (Kelloway, 1998). As discussed earlier, the models differed by two parameters represented by hypotheses 5b and 6d. The $\chi^2_{difference}$ would be significant if the obtained $\chi^2_{difference}$ value was greater than the critical $\chi^2_{difference}$ value at associated $df_{difference}$. If the $\chi^2_{difference}$ was significant, it would be concluded that the model with more freely estimated parameters (Comprehensive-2 model) fitted the data better than the nested model (Parsimonious-2 model) with lesser freely estimated parameters (Kelloway, 1998). However, if the $\chi^2_{difference}$ was insignificant, and provided that both models fitted equally well statistically, it would be concluded that the nested model fitted the data better than the model with more freely estimated parameters, the parameters in question could be eliminated from the model, and thereby the nested model would be accepted (Kelloway, 1998).

Table 4.2 shows the model estimation results for the Comprehensive-2 model[22] and the Parsimonious-2 model[23]. Based on the model estimation of the Comprehensive-2 model, the LISREL results yielded a good model fit of ^{2} (df = 422, N = 221) = 1109.53, p = .00; and RMSEA = 0.090. The LISREL results of the Parsimonious-2 model also yielded a good model fit of ^{2} (df = 424, N = 221) = 1109.89, p = .00; and RMSEA = 0.090. The obtained $\chi^2_{difference}$ value was 0.36 (i.e. 1109.89 – 1109.53). The obtained $\chi^2_{difference}$ value was less than the critical χ^2 value of 5.99 at associated $df_{difference}$ = 2 (i.e. 424 – 422), which clearly meant that the $\chi^2_{difference}$ was insignificant. As the $\chi^2_{difference}$ was insignificant and both the Comprehensive-2 and Parsimonious-2 models had equally good model fit, it was concluded that the Parsimonious-2 model fitted the data better than Comprehensive-2 model. Therefore, hypotheses 5b and 6d, as the parameters in question, could be eliminated, and the Parsimonious-2 model was thereby accepted.

Furthermore, as shown in Table 4.2, the comparative (or relative) fit index NFI also showed that the Parsimonious-2 model (NFI = 0.90) provided a marginally better fit to the data than did the Comprehensive-2 Model (NFI = 0.89). Furthermore, the parsimonious fit indices PGFI and PNFI showed that the Parsimonious-2 model (PGFI = 0.64, PNFI = 0.82) provided a marginally better parsimonious fit to the data than did the Comprehensive-2 model (PGFI = 0.63, PNFI = 0.81).

[22] LISREL output for Comprehensive-2 model estimation is provided in Appendix E1.
[23] LISREL output for Parsimonious-2 model estimation is provided in Appendix E2.

Figure 4.5 shows the structural model estimation of the Parsimonious-2 model. Table 4.3 shows the LISREL results pertaining to hypotheses testing based on Parsimonious-2.

Table 4.2 Goodness of Fit Statistics for the Comprehensive-2 and Parsimonious-2 Models (*Major*)

	Degree of Freedom (df)	**Minimum Fit Function Chi Square (X^2)**	**Root Mean Squared Error of Approximation (RMSEA)**	**Adjusted Goodness of Fit (AGFI)**	**Goodness of Fit (GFI)**	**Expected Cross-validation Index (ECVI)**	**Normed Fit Index (NFI)**	**Comparative Fit Index (CFI)**	**Parsimony Goodness-of-fit Index (PGFI)**	**Parsimony Normed Fit Index (PNFI)**
Criteria Model		*Smaller X^2 value is better - corresponds to better fit Diamanto-poulos & Siguaw (2000)*	*<0.10 good fit <0.05 very good fit <0.01 outstanding fit Steiger (1990)*	*0<AGFI<1 >0.9 good fit*	*0<GFI<1 >0.9 good fit*	*Focuses on overall error between population covariance and model covariance* *Smaller ECVI is better – greatest potential for replication*	*Indicates % improvement cp to null model O<NFI<1 >0.9 good fit Bentler & Bonett (1980)*	*Higher CFI is better-means more parsimonious*	*0<PGFI<1 Higher PGFI is better-means more parsimonious*	*O<PNFI<1 Higher PNFI is better - means more parsimonious James et al (1982)*
	Absolute Fit						*Comparative (Relative) Fit*		*Parsimonious Fit*	
Comprehensive-2	422	1109.53	0.090	0.70	0.74	6.00	0.89	0.93	0.63	0.81
Parsimonious-2	424	1109.88	0.090	0.70	0.74	5.99	0.90	0.93	0.64	0.82

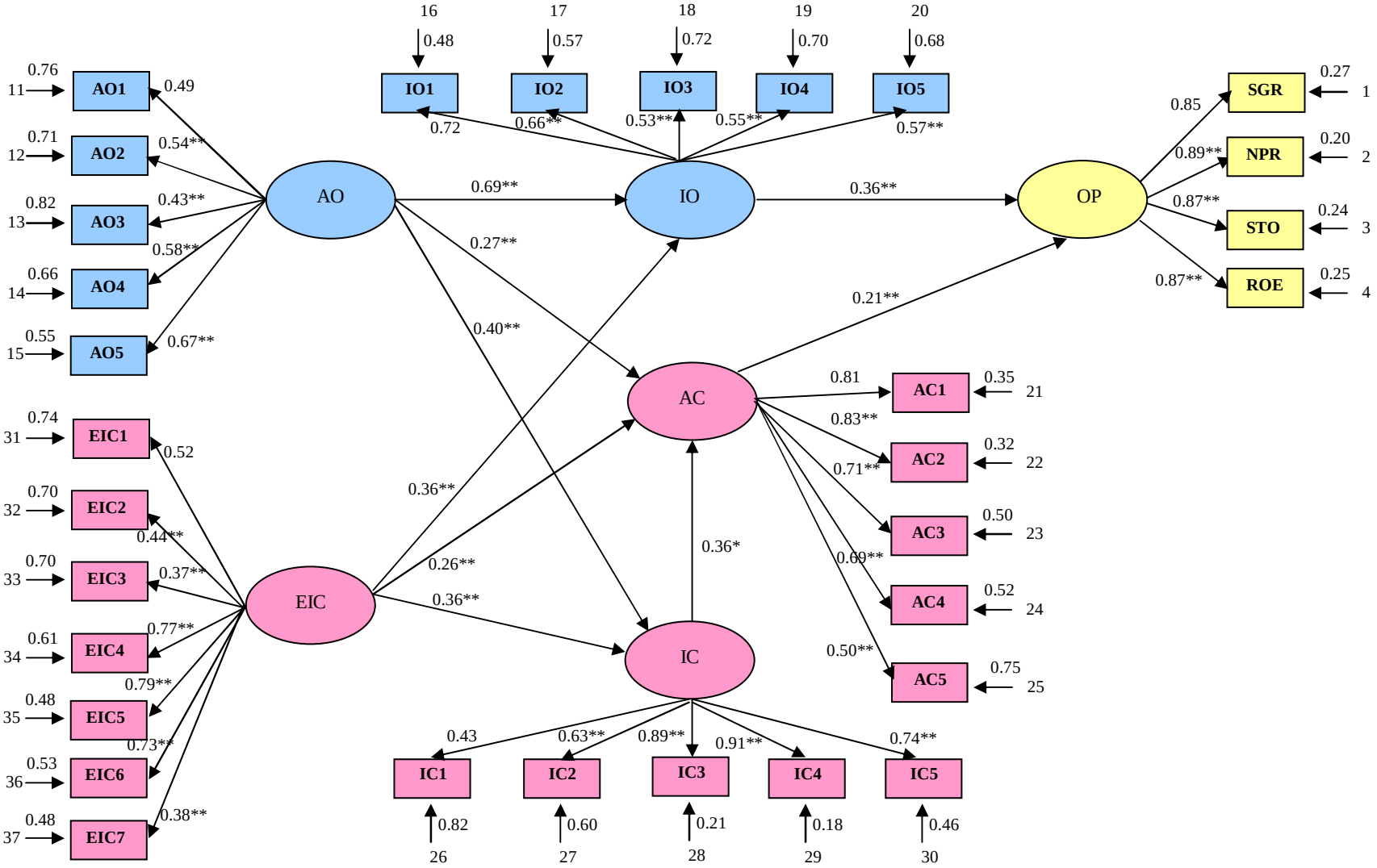

Figure 4.5 Structural Equation Model Showing Standardised Coefficient Estimates for the Parsimonious-2 Model (*Major*)
*Note: *Significant at p < 0.50. **Significant at p < 0.01*

Table 4.3 Results of the Hypotheses Testing Based on the Parsimonious-2 Model

		Parsimonious-2		
Hypothesised Relationships Between Studied Factors		**Standardised effect**	**p**	**Hypotheses supported**
H2a	Direct effect of 'Autonomous Orientation' on 'Improvement Orientation'	0.69	< 0.01	**Yes**
H2b	Direct effect of 'Autonomous Orientation' on 'Adaptive Capability'	0.27	< 0.01	**Yes**
H2c	Direct effect of 'Autonomous Orientation' on 'Innovative Capability'	0.40	< 0.01	**Yes**
H3	Direct effect of 'Improvement Orientation' on 'Organisational Performance'	0.36	< 0.01	**Yes**
H4	Direct effect of 'Adaptive Capability' on 'Organisational Performance'	0.21	< 0.05	**Yes**
H5a	Direct effect of 'Innovative Capability' on 'Adaptive Capability'	0.36	< 0.01	**Yes**
H5b	*Direct effect of 'Innovative Capability' on 'Organisational Performance'*	om	om	om
H6a	Direct effect of 'External Intelligence Capability' on 'Improvement Orientation'	0.36	< 0.01	**Yes**
H6b	Direct effect of 'External Intelligence Capability' on 'Adaptive Capability'	0.26	< 0.01	**Yes**
H6c	Direct effect of 'External Intelligence Capability' on 'Innovative Capability'	0.36	< 0.01	**Yes**
H6d	*Direct effect of 'External Intelligence Capability' on 'Organisational Performance'*	om	om	om

Note: 'om' indicates the parameter was omitted from the model.

Hypotheses 2a, 2b and 2c – Testing the direct effect of autonomous orientation on improvement orientation, adaptive capability and innovative capability

As shown in Table 4.3, the hypothesised path between autonomous orientation and improvement orientation was supported (= 0.69, p<0.01). In relation to the measure of improvement orientation, autonomous orientation was the strongest predictor comparatively for the measure 'improve ways' (= 0.69 *0.72 = 0.497). This was followed by the measure 'new ways' (= 0.69*0.66 = 0.455), the measures 'new policies' (= 0.69*0.57 = 0.393) and the measure 'probe causes' (= 0.69*0.55 = 0.380). It was the weakest predictor comparatively for the measure 'review performance' (= 0.69*0.53 = 0.366).

The hypothesised path between autonomous orientation and adaptive capability was supported (= 0.27, p<0.01). In relation to the measures of adaptive capability, autonomous orientation was the strongest predictor comparatively for the aspect 'align resources' (= 0.27 *0.83 = 0.224). This was followed by the measure 'integrate resources' (= 0.27*0.81 = 0.219), the measure 'build resources' (= 0.27*0.71 = 0.192) and the measure 'reconfigure resources' (= 0.27*0.69 = 0.186). It was the weakest predictor comparatively for the measure 'adapt product-market' (= 0.27*0.50 = 0.135).

The hypothesised path between autonomous orientation and innovative capability was supported (= 0.40, p<0.01). In relation to the measures of innovative capability, autonomous orientation was the strongest predictor comparatively for the measure 'innovation process' (= 0.40*0.91 = 0.364). This was followed by the measure 'innovation systems' (= 0.40*0.89 = 0.356), the measures 'exploit connections' (= 0.40*0.74 = 0.296) and the measure 'translate learning' (= 0.40*0.63 = 0.252). It was the weakest predictor comparatively for the measure 'innovative approaches' (= 0.40*0.43 = 0.172).

Hypothesis 3 – Testing the direct effect of improvement orientation on organisational performance

As shown in Table 4.3, the hypothesised path between improvement orientation and organisational performance was supported (= 0.36, p<0.01). In relation to the measure of organisational performance, improvement orientation was the strongest predictor comparatively for the measure 'net profit growth' (= 0.36 *0.89 = 0.320). This was followed by the measure 'sales turnover' (= 0.36*0.87 = 0.313) and the measure 'return on equity' (= 0.36*0.87 = 0.313). It was the weakest predictor comparatively for the measure 'sales growth' (= 0.36*0.85 = 0.306).

Hypothesis 4 – Testing the direct effect of adaptive capability on organisational performance

The hypothesised path between adaptive capability and organisational performance was supported (= 0.21, p<0.01). In relation to the measure of organisational performance, adaptive capability was the strongest predictor comparatively for the measure 'net profit growth' (= 0.21*0.89 = 0.187). This was followed by the measure 'sales turnover' (= 0.21*0.87 = 0.183) and the measure 'return on equity' (= 0.21*0.87 = 0.187). It was the weakest predictor comparatively for the measure 'sales growth' (= 0.21*0.85 = 0.179).

Hypotheses 5a and 5b – Testing the direct effect of innovative capability on adaptive capability and organisational performance

The hypothesised path between innovative capability and adaptive capability was supported (= 0.36, p<0.05). In relation to the measures of adaptive capability, innovation capability was the strongest predictor comparatively for the measure 'align resources' (= 0.36 *0.83 = 0.299). This was followed by the measure 'integrate resources' (= 0.36*0.81 = 0.292), the measures 'build resources' (= 0.36*0.71 = 0.256) and the measure 'reconfigure resources' (= 0.36*0.69 = 0.248). It was the weakest predictor comparatively for the measure 'adapt product-market' (= 0.36*0.50 = 0.180).

As the Parsimonious-2 model was accepted, the hypothesised path between innovation capability and organisation performance was omitted.

Hypotheses 6a, 6b, 6c and 6d – Testing the direct effect of external intelligence capability on improvement orientation, adaptive capability, innovative capability and organisational performance.

The hypothesised path between external intelligence capability and improvement orientation was supported (= 0.36, p<0.01). In relation to the measure of improvement orientation, external intelligence capability was the strongest predictor comparatively

for the measure ‘improve ways’ (= 0.36 *0.72 = 0.259). This was followed by the measure ‘new ways’ (= 0.36*0.66 = 0.238), the measures ‘new policies’ (= 0.36*0.57 = 0.205) and the measure ‘probe causes’ (= 0.36*0.55 = 0.198). It was the weakest predictor comparatively for the measure ‘review performance’ (= 0.36*0.53 = 0.191).

The hypothesised path between external intelligence capability and adaptive capability was supported (= 0.26, p<0.01). In relation to the measure of adaptive capability, external intelligence capability was the strongest predictor comparatively for the measure ‘align resources’ (= 0.26 *0.83 = 0.216). This was followed by the measure ‘integrate resources’ (= 0.26*0.81 = 0.211), the measures ‘build resources’ (= 0.26*0.71 = 0.185) and the measure ‘reconfigure resources’ (= 0.26*0.69 = 0.179). It was the weakest predictor comparatively for the measure ‘adapt product-market’ (= 0.26*0.50 = 0.130).

The hypothesised path between external intelligence capability and innovative capability was supported (= 0.36, p<0.01). In relation to the measure of innovative capability, external intelligence capability was the strongest predictor comparatively for the measure ‘innovation process’ (= 0.36*0.91 = 0.328). This was followed by the measure ‘innovation systems’ (= 0.36*0.89 = 0.320), the measure ‘exploit connections’ (= 0.36*0.74 = 0.266) and the measure ‘translate learning’ (= 0.36*0.63 = 0.227). It was the weakest predictor comparatively for the measure ‘innovative approaches’ (= 0.36*0.43 = 0.155).

As the Parismonious-2 model was accepted, the hypothesised path between external intelligence capability and organisation performance was omitted.

Confirmed Framework of HOP Model

Based on the foregoing results of the hypotheses testing, Figure 4.6 shows the confirmed framework of the HOP model. The HOP model was able to explain 24% ($p < 0.01$) of the variance in organisational performance, 90% ($p < 0.05$) of the variance in improvement orientation, 51% ($p < 0.01$) of the variance in adaptive capability and 46% ($p < 0.01$) of the variance in innovative capability. It was found that improvement

orientation predicted 36% (at $p < 0.01$) of the variance in organisational performance. It was also found that autonomous orientation predicted 69% (at $p < 0.01$) of the variance in improvement orientation, 27% (at $p < 0.01$) of the variance in adaptive capability, and 40% (at $p < 0.01$) of the variance in innovative capability, and adaptive capability predicted 21% (at $p < 0.01$) of the variance in organisational performance. The study further showed that innovative capability predicted 36% ($p < 0.05$) of the variance in the adaptive capability. The study also showed that external intelligence capability predicted 36% (at $p < 0.01$) of the variance in improvement orientation, 26% (at $p < 0.01$) of the variance in adaptive capability, and 36% (at $p < 0.01$) of the variance in innovative capability.

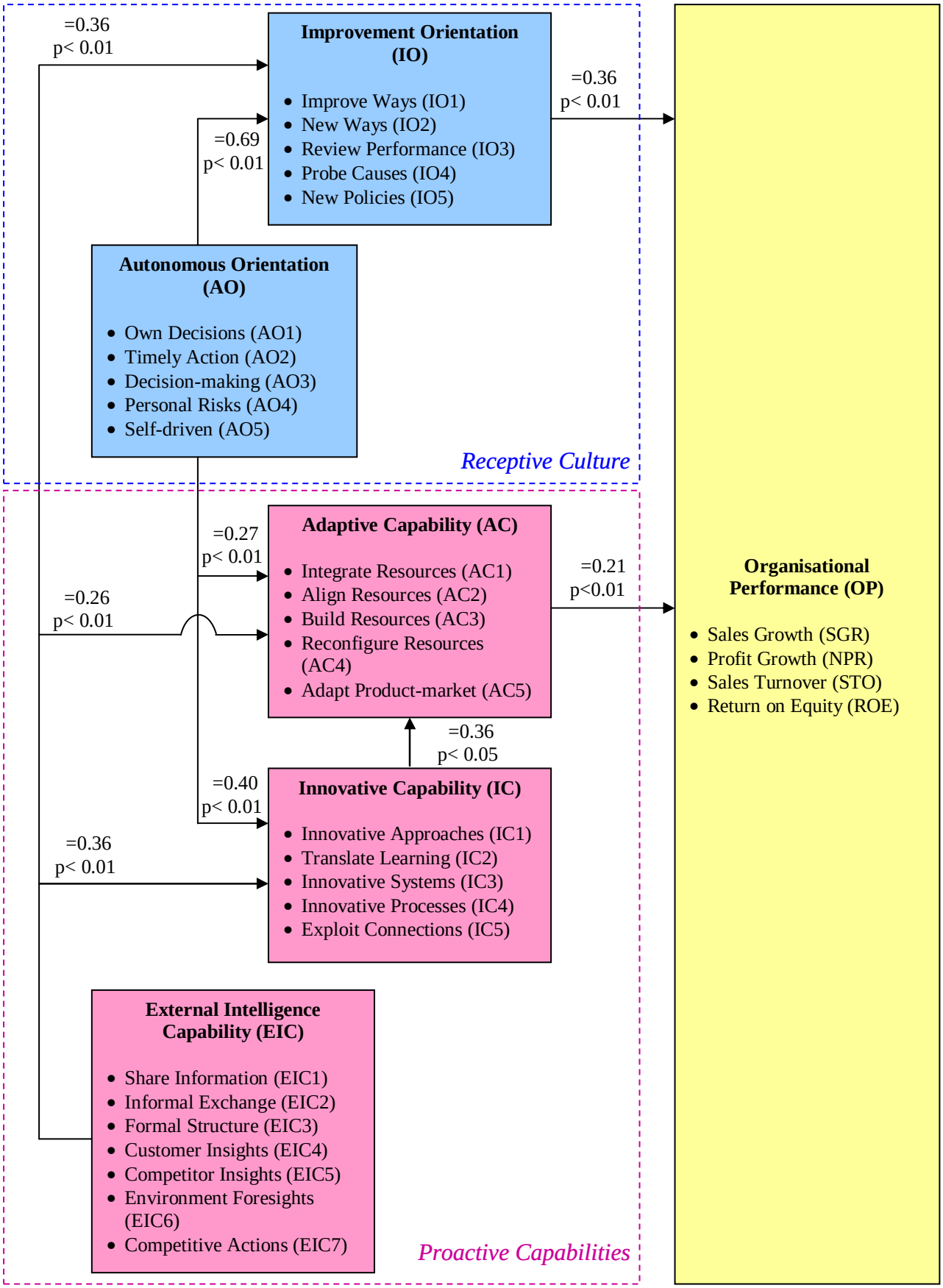

Figure 4.6 Confirmed Framework of HOP Model

4.4 Testing for the Effects of the Control Factors on Organizational Performance

For this study, the control factors included organisation age, organisation size, type of industry sector in which the organisation is most active, and the type of business entity. As these factors are categorical type variables, the use of dummy factors was introduced. The dummy factor is a simple and useful method of introducing into a regression analysis information contained in factors that are not continuous type factors (Suits, 1957). If regression estimates are to be obtained, one of the dummy factors is to be omitted from the equation in order to impose additional constraints on the parameters of regression equations (Suits, 1957).

To test for the effects of these control factors, in view of the need for dummy factors and to better facilitate the analyses, standard multiple regression analyses were conducted using PASW Statistics 17 software regression. These analyses were done based on the Sig. (1-tailed) value of the standardised coefficients (s) of the control factors. If the Sig. value is greater than 0.05 (at $p < 0.05$), it is concluded that the effect of the associated control factor on the prediction of the dependent factors is not significant (Pallant, 2007). Grand-average data was used for all the independent and dependent factors of the HOP model.

The results of the standard multiple regression found that all the control factors had a Sig. value greater than 0.05. It was thus concluded that the effects of all the identified control factors were not significant.

4.5 Chapter Conclusion

The following conclusions were made based on the preceding analyses in this chapter. First, ten hypotheses were tested. Of the ten, eight hypotheses H2a-H2c, H3, H5a and H6a-H6c were found to be supported at $p < 0.01$. Second, hypothesis H1 was found not to be supported. This finding meant that the direct effect of the formulation-implementation balance on organisational performance was not supported.

Third, hypotheses H5b and H6d were omitted because based on the $\chi^2_{difference}$ test and the goodness of fit indices, the Parsimonious-2 model was accepted as the better fit

model when assessed against the Comprehensive-2 model. The Comprehensive-2 model was discarded. The findings meant the direct effect of innovative capability on organisational performance was not supported. Also, the direct effect of external intelligence capability on organisational performance was not supported.

Fourth, the framework of the HOP model was confirmed. It consisted of five factors, namely autonomous orientation, improvement orientation, adaptive capability, innovative capability and external intelligence capability. The HOP model was able to explain 24% ($p < 0.01$) of the variance in organisational performance. Last, the effects of all the identified control factors on organisational performance were found to be not significant. The implications of the study's findings are discussed in the next and final chapter.

Chapter 5 – Discussion and Conclusion

The first section of the chapter discusses the theoretical and practical implications of this study's findings. The following two sections describe the limitations of the study and some possible directions for future research.

5.1 Implications of the Study's Findings

Strategy research has generated a lot of insights for strategy formulation but has given relatively little attention to strategy implementation. The few studies on strategy implementation have focused on tangible organisational dimensions such as structure and systems, but the strategic implementation role of intangible dimensions such as culture and capabilities has yet to be examined. Research on high organisational performance has focused on investigating organisational dimensions associated with high performance organisations but has not investigated the factors of the dimensions, and most studies were conducted for the context of America. This research adds to the studies by examining the strategic implementation role of intangible organisational dimensions, namely the formulation-implementation balance, receptive culture and proactive capabilities, their factors and a particular configuration of their factors for high organisational performance based in the context of Singapore. The study argues that it is important for research on high organisational performance to give attention on investigating organisational factors associated with high performance organisations and how the factors are managed by the organisations. The study also argues that organisations have to manage themselves at a state of readiness that helps in coping with the changing external environment. They need to be adaptive and innovative, and to be able to continuously monitor changes in the external environment and make sense of prospective change-patterns in order to achieve high organisational performance in dynamic environments fuelled by fluctuating customer needs, innovative competitor movements, accelerating technological advancement and transforming economies. It is important particularly for organisations based in Singapore to give emphasis on developing the organisational factors for performance because the island-state country does not have its own natural resources except people and offers little scale of economy for organisations to fall back on in a recession. Also, the bigger role in planning which the Singapore government has taken up seems to make it easier for organisations based in its country to

perform. The study seems to be in line with a recent research on businesses in China whereby Wei and Wang (2010) found that organisations which are able to respond to prospective external change-patterns and are innovative have a better chance of achieving superior performance. The study also seems to be in line with another recent research on Australian and New Zealand manufacturing and service businesses whereby O'Cass and Weerawardena (2010) found that a challenging external environment would trigger organisations to commit their strategic resources to better understand their customers and competitors thus enabling them to be more effective at serving their markets and thereby deriving superior performance.

This study extends the literature by establishing a receptive culture as a particular type of organisational culture which is important for achieving high organisational performance. While previous empirical research has produced a number of findings on the general relationship between organisational culture and performance (e.g. Cameron & Ettington, 1988; Trice & Beyer, 1993; Denison & Mishra, 1995; Cameron & Quinn, 2005) and the general importance of culture on performance (Kotter & Heskett, 1992; Trompenaars & Hampden-Turner, 2004; Cameron & Quinn, 2005), the relationship between particular culture types and performance has not been investigated.

Previous research on organisational culture in strategic management has focused on the internal alignment of human resources as the mechanism through which organisational culture impacts performance. Although the internal alignment is important, this study particularly argues that in the context of the increasing complexity and volatility of the external environment that now exists, a culture which focuses on external conditions, and is receptive to external information is a more important mechanism through which culture impacts performance. Having a receptive culture helps organisations to manage a state of readiness in order to capitalise on the best external opportunities available at different moments in time. The more receptive the culture of an organisation, the better the outcome of strategy implementation that can be expected.

The study also established the importance of autonomous orientation and improvement orientation as particular factors of a receptive culture associated with achieving high organisational performance. The finding extended the work by Van den Berg and Wilderom (2004) which developed a more holistic model of organisational

culture that consisted of five factors but did not investigate into which of the factors are associated with high organisational performance. The study found that improvement orientation has a direct effect on organisational performance which implied that organisations could stand a better chance of achieving high organisational performance if their employees have an inclination to source better ways of doing things and are willing to try them out. The study also found that autonomous orientation has three indirect effects on organisational performance. Its first indirect effect is mediated through the factor improvement orientation. This means that autonomous orientation per se may not be useful to an organisation, but autonomous orientation will help an organization to perform when it is coupled with improvement orientation. In other words, managers in organisations need to not only have the power to make decisions based on receiving information from external sources, but they also have to have a desire to improve and be in a culture that encourages improvement. As such, it will be useful for managers to favour a more decentralised decision-making process. It will also be useful to encourage employees, when taking on tasks or problems, to be willing to take personal risks, to be more self-driven, to actively look out for ways to improve, and to be keen to try out new ways of doing things. Furthermore, it is important for managers to look into giving regular attention to reviewing actual ongoing performance data, probing underlying causes of observed outcomes, and implementing new policies or systems where appropriate.

Autonomous orientation's second indirect effect is mediated through the adaptive capability factor. This means that organisations also need to be able to adapt if they are to take advantage of the external information availability and the managers' power to make decisions. Its third indirect effect is mediated through the innovative capability factor and then through the adaptive capability factor. This means that organisations also have to have the ability to be innovative, to take advantage of the situation. Furthermore, innovation impacts overall adaptive capability. Overall, this means the relationships between these important factors, which are major strategic implementation factors, are complex and interdependent, which may help to explain why previous research treating these factors independently has been less able to establish clearly what makes strategy implementation work effectively.

While the construct of dynamic capabilities has received considerable research attention in the strategic management literature, relatively little attention has been given

to the study of particular factors of dynamic capabilities (Easterby-Smith, Lyles & Peteraf, 2009), and particularly factors associated with high organisational performance. This study also extends the literature by establishing proactive capabilities as a particular set of dynamic capabilities which are important for achieving high organisational performance. The findings indicate that organisations which possess proactive capabilities have a better chance of achieving high organisational performance because they can effectively prioritise and act more quickly to capitalise on fleeting opportunities.

This study established adaptive capability, innovative capability and external intelligence capability as particular proactive capabilities which are important for high organisational performance. Adaptive capability had a direct effect on organisational performance which implied that organisations can stand a better chance of achieving high organisational performance if they are adept at introducing and managing internal changes. The finding supported the claim by Eisenhardt and Sull (2000) that adaptive capability helps organisations to capitalise on the best external opportunities available at different moments in time and if the opportunities are successfully capitalised, they will create significant impact on performance. The finding also resonated with a recent study by Vakratsas and Ma (2009) that found adaptive capability helps an incumbent organisation maintain its advantages and overcome the challenges posed by a major competitive entry. Vakratsas and Ma's findings could have been improved if they had included autonomous orientation, innovative capability and external intelligence capability, mediated by the adaptive capability factor. From a practical standpoint, it is important that managers place emphasis on developing abilities that can integrate, align, build and reconfigure organisational resources to respond to changing external environmental conditions; and to be able to adapt product-market scope to take advantage of external opportunities.

Although innovative capability was expected to have a direct effect and an indirect effect on organisational performance, only indirect effects were found. The finding supported the claim by Tripsas (1997) that innovative capability needed to be mediated by adaptive capability. This meant that, when pursuing high organisational performance, it is important for organisations to be adept at developing new products or new markets, and also adept at introducing and managing internal changes. It could be expected that a higher level of innovative capability would result in a higher level of adaptive capability

and, consequently, a higher organisational performance. From a practical standpoint, it is important for managers to give attention to developing innovative business management approaches, translate the organisations' learning about changing external market needs into producing new products or entering new markets, have systems in place to facilitate innovation activities, and explore new connections between business ideas.

External intelligence capability was expected to have a direct and three indirect effects on organisational performance. However, the results found only the three indirect effects. Its first indirect effect is mediated through the improvement orientation factor which implied that organisations need to pay attention to having a culture oriented to improvement if they are to make the best of external intelligence which has been gathered. The findings suggest that a higher level of external intelligence capability will result in a higher level of improvement orientation, bringing about higher organisational performance. External intelligence capability's second indirect effect is mediated through the adaptive capability factor. This implies that the organisation's ability to adapt by changing the internal processes and systems is important in allowing it to take advantage of the external intelligence which has been gathered. Without this, the intelligence may well be wasted. This means that a higher level of external intelligence capability will result in a higher level of adaptive capability and, consequently, higher organisational performance.

External intelligence capability's third indirect effect is mediated through the innovative capability factor and then the adaptive capability factor. This implied that for high organisational performance, the way organisations make sense of environmental changes will further influence their new product or new market development efforts. It can be expected that a higher level of external intelligence capability will result in a higher level of innovation capability and a higher level of adaptive capability, and consequently a higher level of adaptive capability will bring about a higher organisational performance. From a practical standpoint, organisations need to regularly analyse customer information and competitor information collectively to generate insights about customer changing needs and preferences, competitors' initiatives, and possible future states of the business environment. Also, managers need to engage their organisations to look into encouraging the sharing of information openly as well as the informal exchange of information with colleagues, putting in place a formal structure to

allow the sharing of information, and taking competitive actions in response to the business insights generated.

The results of the study showed that the direct effect of external intelligence capability on organisational performance was unsupported. Therefore, this study does not support the argument by Kohli and Jaworski (1990) and Homburg, Krohmer and Workman Jr (2004) that successful employment of external intelligence capability will lead to higher organisational performance. Instead, the finding supports the argument by Menguc and Auh (2006) that external intelligence capability, when employed in isolation, will unlikely result in higher organisational performance.

A disappointing result was that the study did not support the hypothesis that obtaining the formulation-implementation balance is important for achieving high organisational performance. It is possible that some organisations might lack understanding about the notion of strategy implementation, which led them to neglect their strategy implementation as expressed in the questions and therefore their responses to the survey might have biased the results. Also, the study assumed that participating organisations would have a workable strategy. It is also possible that 'focus on implementation' should have been specified for this study instead of 'formulation-implementation balance' which suggests that perhaps giving emphasis to strategy implementation, rather than obtaining formulation-implementation balance, is associated with organisational performance. Stated differently, the balance or equilibrium between formulation and implementation is probably an ideal state which is very difficult to attain and sustain, whereas a disequilibrium state with more emphasis on implementation may be better for achieving high organisational performance. This seems to be in line with a recent study on Jordanian businesses whereby Aldehayyat and Anchor (2010) found that the number of implementations problems was conversely associated with organisational performance. It was also argued that organisations might place emphasis merely on overcoming implementation problems (Aldehayyat & Anchor, 2010).

5.2 Limitations of the Study

There were several limitations with the design of this study. First, all the data for the study was collected using a self-report survey, which constitutes a common method. This was done because the study investigated intangible dimensions, including the formulation-implementation balance, receptive culture and proactive capabilities, and objective data was difficult to obtain. This approach raises the potential for common method biases. Common method biases pertain to the impact of respondents' implicit theories or 'mind-sets' on the observed relationship between the independent factors and dependent factors (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). However, Spector (2006) argued that it is incorrect to assume that the use of a common method automatically introduces systematic bias and that the problem is overstated.

Moreover, self-report is not uncommon in management studies (Spanos & Lioukas, 2001; Homburg, Krohmer & Workman Jr, 2004). Also, previous research has demonstrated that managerial assessment of organisational performance is generally quite consistent with objective performance data (Dess & Robinson Jr, 1984; Venkatraman & Ramanujam, 1986). The advantage of obtaining managerial assessment of organisational performance is that it does not require the collection of sensitive and private financial data (McGee & Peterson, 2000). Nevertheless, it is recommended that future research replicate the present findings using data gathered from multiple sources if possible.

Second, a possible criticism of this study concerns the generalisability of the results. The present study examined the phenomena of high organisational performance based on the context of the S1000 sample frame. The generalisability of the results to organisations outside of the S1000 sample frame remains to be determined. Therefore, a useful direction for future research would be to test the HOP model using data of organisations outside of the S1000 sample frame with the aim to further confirm and to be able to better generalise the results to the context of the business environment in Singapore.

Third, there remains the question of whether Singapore is similar to, or different from, other countries – would these findings be applicable elsewhere and/or would other findings be supported in other countries. Given most of the literature is US-based, the value of this study is that it is indeed from a different country. However, in truth, there

is little or nothing here to suggest a 'Singapore' effect. But unless the findings are tested across different countries simultaneously, this limitation remains. Fourth, the study assumed that participating organisations would have a workable strategy. Perhaps some of them did not have a workable strategy and thus their responses to the survey might have biased the results.

Last, another possible criticism concerns the reliance on cross-sectional data. As such, the present study considers only organisation performance within a 3-year period. It also does not consider organisations that have ceased their operations. Future research in this area would benefit from a longitudinal study, which included organisations that are no longer in existence. Such a study could provide valuable insights into the factors that contribute to organisational failures.

5.3 Directions for Future Research

This section highlights the importance of future research to cross-validate the results of the present study, and to further extend the generalisability of the results. There are several recommendations for future research. First, as discussed earlier in Section 5.3, in order to avoid possible common method biases, future research could collect data on independent and dependent factors from different sources.

Second, as discussed earlier in Section 5.3, future research could benefit from a longitudinal approach to data collection. A longitudinal study, unlike cross-sectional study, tracks the same organisations over long periods of time, and therefore makes studying factors for high organisational performance, including their developmental trends, more accurate. A longitudinal study would also allow the inclusion of organisations that had ceased their operations. If failed organisations were included, insights into the factors that contribute to their failure, in relation to high organisational performance, could be examined. Also, a longitudinal study could enable a more fine-grained study on whether or not the factors for high organisational performance change over time.

Third, an interesting avenue of investigation would be to test whether or not the HOP model is applicable in other countries because the different business environmental

constraints and conditions in those countries might have different effects on the factors of the HOP model. Future research could subsequently undertake a comparative study to explore possible different factors that may contribute to the phenomenon of high organisational performance with respect to the different business environmental context and settings of those countries.

Fourth, future studies on organisational performance in relation to the role of autonomous orientation or external intelligence capability should include improvement orientation, adaptive capability and innovative capability as mediating factors.

Finally, in the context of Singapore, it is recommended that future research investigate model generalisability to small and medium sized businesses. This future study could be further extended towards establishing whether the factors needed for high organisational performance vary with the stage of business lifecycle which includes the start-up stage, growth stage, maturity stage and decline stage (Hanks, Watson, Jansen & Chandler, 1993; Greiner, 1998; Lichtenstein & Lyons, 2008).

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Appendices

Appendix A1:

A Summary of Measures Used to Operationalise the Factor Organisational Performance

Measure	**Serial number in the questionnaire**	**Number of measures**	**Source**
Sales growth rate compared to industry	1a	4	Self-developed with reference made to Carton and Hofer (2006) and Chen and Dodd (1997)
Net profit growth rate compared to industry	1b		
Annual sales turnover compared to industry	1c		
Return on equity compared to industry	1d		

Appendix A2:

A Summary of Measures Used to Operationalise the Factor Formulation-Implementation Balance

Measure	Serial number in questionnaire	Number of measures	Source
Organisation upholds a posture that is always ready to respond to unpredictable changing external environment	3a	8	Self-developed with reference made to Eisenhardt and Sull (2001) and Laurie, Doz and Sheer (2006)
Organisation introduces internal changes regularly	3b		Self-developed with reference made to Noble (1999), Varadarajan (1999), Hubbard et al (2002), and Homburg, Krohmer and Workman Jr (2004)
Organisation takes action in an iterative approach	3c		
Organisation is able to respond to changing environmental conditions on a real-time basis	3e		
Organisation alters strategy to fit changing environmental conditions	3d		Self-developed with reference made to Freedman (2003), Okumus (2003), Mankins and Steele (2005)
Organisation has an organizational culture that helps in responding to a volatile external environment	3f		Self-developed with reference made to Barney (1992), Kotter and Heskett (1992), and Chan, Shaffer and Snape (2004)
Organisation effectively capitalizes on opportunities brought about by changes in the environment	3g		Self-developed with reference made to Amburgey and Dacin (1994), Freedman (2003), Okumus (2003), Mankins and Steele (2005)
Organisation generates business foresights about future possibilities	3h		Self-developed with reference made to Eisenhardt and Sull (2001), Christensen, Raynor and Anthony (2003)

Appendix A3:

A Summary of Measures Used to Operationalise the Factor Autonomous Orientation

Measure	Serial number in questionnaire	Number of measures	Source
Organisation favours empowering employees to make own decisions	4a	5	Self-developed with reference made to von Hippel, Thomke and Sonnack (1999), Cameron and Quinn (2005), and Huston and Sakkab (2006)
Organisation favours empowering employees to take action in making timely changes to the company	4b		
Decision-making processes are primarily decentralised	5		
When employees take on tasks of problems, they are primarily willing to take personal risks	6a		
When employees take on tasks or problems, they are primarily self-driven to deal with the situations	6b		

Appendix A4:

A Summary of Measures Used to Operationalise the Factor Improvement Orientation

Measure	Serial number in questionnaire	Number of measures	Source
When employees take on tasks or problems, they are (primarily) actively look out for ways to improve	6c	5	Self-developed with reference made to Quinn and Cameron (2005) and Neo and Chen (2007)
When employees take on tasks or problems, they are primarily keen to try out new ways of doing things	6d		
Organisation gives regular attention to reviewing actual ongoing performance data	7a		
Organisation gives regular attention to probing underlying causes of observed outcomes	7b		
Organisation gives regular attention to implementing new policies or systems	7c		

Appendix A5:

A Summary of Measures Used to Operationalise the Factor Adaptive Capability

Measure	Serial number in questionnaire	Number of measures	Source
In order to capitalise on external opportunities, organisation has the ability to integrate organisational resources to match changing organisational needs	8a	5	Self-developed with reference made to Wang and Ahmed (2007)
In order to capitalise on external opportunities, organisation has the ability to align organisational resources to changing external environmental conditions	8b		
In order to capitalise on external opportunities, organisation has the ability to build new organisational resources to respond to changing environmental conditions	8c		
In order to capitalise on external opportunities, organisation has the ability to adapt product-market scope to take advantage of external opportunities	8e		
In order to capitalise on external opportunities, organisation has the ability to reconfigure resources to respond to changing external environmental conditions	8d		Self-developed with reference made to Eisenhardt and Sull (2001), Hubbard et al (2002), and Wang and Ahmed (2007)

Appendix A6:

A Summary of Measures Used to Operationalise the Factor Innovative Capability

Measure	Serial number in questionnaire	Number of measures	Source
In order to capitalise on external opportunities, organisation has the ability to develop innovative approaches to capitalise on business opportunities	8f	5	Self-developed with reference made to Neo and Chen (2007)
In order to take advantage of external opportunities, organisation has the capability to exploit new connections between ideas	9d		
In order to take advantage of external opportunities, organisation has the capability to translate its learning about changing external market needs into developing new products or markets	9a		Self-developed with reference made to Wang and Ahmed (2007)
In order to take advantage of external opportunities, organisation has the capability to have systems in place to encourage innovative behavior at all levels of the company	9b		Self-developed with reference made to Barney, Wright and Ketchen Jr (2001), Winter (2003), and Feldman and Pentland (2003)
In order to take advantage of external opportunities, organisation has the capability to have processes in place to facilitate innovation activities	9c		

Appendix A7:

A Summary of Measures Used to Operationalise the Factor External Intelligence Capability

Measure	Serial number in questionnaire	Number of measures	Source
In order to take advantage of external opportunities, organisation has the capability to encourage sharing of information openly	9e	7	Self-developed with reference made to Wang and Ahmed (2007)
In order to take advantage of external opportunities, organisation has the capability to engage in informal exchange of information with colleagues	9f		Self-developed with reference made to Kim and Goshal (1986)
In order to take advantage of external opportunities, organisation has the capability to have a formal structure in place to allow sharing of information	9g		
Organisation regularly analyses customer information and competitor information to generate insights about customer needs and preferences	10a		Self-developed with reference made to Kohli and Jaworski (1990), Kahaner (1997), and Homburg, Krohmer and Workman Jr (2004)
Organisation regularly analyses customer information and competitor information to generate insights about competitors' initiatives	10b		
Organisation regularly analyses customer information and competitor information to generate foresights about possible future state of the business environment	10c		Self-developed with reference made to Nicholls-Nixon (2005)
Organisation emphasizes taking competitive actions	11		Self-developed with reference made to Barlett and Ghoshal (1998)

Appendix B1: Semi-structured Questions for Research Interview

Achieving High Organizational Performance: The Importance of Formulation-Implementation, Receptive Culture and Proactive Capabilities

1. Can you share with me how your organization has been performing for the past few years?
2. How does your organization view the relationship between growth and performance?
3. What are the major issues when your organization concurrently attempt to achieve growth and performance?

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4. Can you speak about how your organization has been doing for its strategy implementation?
5. How important is the organizational culture in strategy implementation?
6. What are the key organizational capabilities in strategy implementation?
7. Are there other aspects of organization important for strategy implementation?

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8. Can you describe to me the culture in your organization?
9. Do formal procedures generally govern what your employees do?
10. Is your organization keen about trying out new ways of doing things?

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11. Can you tell me about adaptability in your organization?
12. What are the most important areas into which your organization is putting in efforts to managing its organizational resources?

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13. Can you describe to me the aspect of innovativeness of your organization?
14. What type of innovations does your organization mostly seek?
15. Are there any systems in place to foster innovative behavior at all levels of your organization?

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16. Can you speak about the aspect of information sharing in your organization?
17. How is customer information being used by your organization?
18. What are the main organizational processes involved for making use of customer information?
19. Can you share about how competitor information is being used by your organization?
20. What main organizational processes are involved?

~ Thank you ~

Appendix B2: Survey Questionnaire (8 Pages)

Seeking Organizational Performance

This research is concerned with organizational performance. Please respond to the questions in terms of your views of how the statements apply to your organization **FOR THE LAST THREE YEARS (2005-2007)**.

For the responses to be useful, it is critical that you be as candid as possible in your responses. All responses will be treated with strictest confidentiality. There is no right or wrong answer.

PLEASE COMPLETE ALL THE ITEMS.

Section A – This section considers the organizational performance and strategy focus of your organization. Please tick (√) the most appropriate response.

1. Compared with your industry, how has your organization performed for the past 3 years?

		Poor	**Below Average**	**Average**	**Above Average**	**Good**
a.	In terms of sales growth rate.	☐	☐	☐	☐	☐
b.	In terms of net profit growth rate.	☐	☐	☐	☐	☐
c.	In terms of sales turnover compared to industry average.	☐	☐	☐	☐	☐
d.	In terms of return on equity.	☐	☐	☐	☐	☐

2. How much emphasis is roughly given between strategy formulation (SF) and strategy implementation (SI)?

90% SF **10% SI** ☐	**75% SF** **25% SI** ☐	**50% SF** **50% SI** ☐	**25% SF** **75% SI** ☐	**10% SF** **90% SI** ☐

3. To seek growth and performance simultaneously, it is critical for my organization to:

		Strongly Disagree	**Dis-agree**	**Un-decided**	**Agree**	**Strongly Agree**
a.	Uphold a posture that is always ready to respond to unpredictable changing external environment.	☐	☐	☐	☐	☐
b.	Introduce internal changes to the organization regularly. "Internal change" means change to any organizational aspect such as structure, processes, systems, technology, management style, shared values, approach to staffing, and others.	☐	☐	☐	☐	☐
c.	Take action in an iterative approach. "Iterative approach" means adjustments or changes are repeatedly made to achieve desired outcomes.	☐	☐	☐	☐	☐
d.	Alter strategy to fit changing environmental conditions.	☐	☐	☐	☐	☐
e.	Be able to respond to changing environmental conditions on a real-time basis.	☐	☐	☐	☐	☐
f.	Have an organizational culture that helps in responding to a volatile external environment.	☐	☐	☐	☐	☐

g.	Effectively capitalize on opportunities brought about by changes in the environment.	☐	☐	☐	☐	☐
h.	Generate business foresights about future possibilities.	☐	☐	☐	☐	☐

Section B – This section considers your organization's culture. Please tick (√) the most appropriate response.

4. My organization favors empowering employees to:

		Strongly Disagree	**Dis-agree**	**Un-decided**	**Agree**	**Strongly Agree**
a.	Make own decisions.	☐	☐	☐	☐	☐
b.	Take action in making timely changes to the organization.	☐	☐	☐	☐	☐

5. Decision-making processes in my organization are primarily decentralized.

	Strongly Disagree	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
	☐	☐	☐	☐	☐

6. When employees in my organization take on tasks or problems, they primarily display the following attributes:

		Strongly Disagree	**Dis-agree**	**Un-decided**	**Agree**	**Strongly Agree**
a.	Willing to take personal risks.	☐	☐	☐	☐	☐
b.	Self-driven to deal with the situations.	☐	☐	☐	☐	☐
c.	Actively look out for ways to improve.	☐	☐	☐	☐	☐
d.	Keen to try out new ways of doing things.	☐	☐	☐	☐	☐

7. My organization gives regular attention to:

		Strongly Disagree	**Dis-agree**	**Un-decided**	**Agree**	**Strongly Agree**
a.	Reviewing actual ongoing performance data.	☐	☐	☐	☐	☐
b.	Probing underlying causes of observed outcomes.	☐	☐	☐	☐	☐
c.	Implementing new policies or systems.	☐	☐	☐	☐	☐

Section C – This section concerns the capabilities of your organization. Please tick (√) the most appropriate response.

8. In order to capitalize on external opportunities, my organization has the capability to:

		Strongly Disagree	**Dis-agree**	**Un-decided**	**Agree**	**Strongly Agree**
a.	Integrate organizational resources to match changing organizational needs.	☐	☐	☐	☐	☐
b.	Align organizational resources to changing external environmental conditions.	☐	☐	☐	☐	☐
c.	Build new organizational resources to respond to changing external environmental conditions.	☐	☐	☐	☐	☐
d.	Reconfigure organizational resources to respond to changing external environmental conditions.	☐	☐	☐	☐	☐
e.	Adapt product-market scope to take advantage of external opportunities.	☐	☐	☐	☐	☐
f.	Develop innovative approaches to capitalize on business opportunities.	☐	☐	☐	☐	☐

9. In order to take advantage of external opportunities, my organization has the capability to:

		Strongly Disagree	Dis-agree	Un-decided	Agree	Strongly Agree
a.	Translate our learning about changing external market needs into developing new products or markets.	☐	☐	☐	☐	☐
b.	Have systems in place to encourage innovative behavior at all levels of my organization.	☐	☐	☐	☐	☐
c.	Have processes in place to facilitate innovation activities.	☐	☐	☐	☐	☐
d.	Exploit new connections between ideas.	☐	☐	☐	☐	☐
e.	Encourage sharing of information openly.	☐	☐	☐	☐	☐
f.	Engage in informal exchange of information with colleagues.	☐	☐	☐	☐	☐
g.	Have a formal structure in place to allow sharing of information.	☐	☐	☐	☐	☐

10. My organization regularly analyzes customer information and competitor information:

		Strongly Disagree	Dis-agree	Un-decided	Agree	Strongly Agree
a.	Generate insights about changing customer needs and preferences.	☐	☐	☐	☐	☐
b.	Generate insights about competitors' initiatives.	☐	☐	☐	☐	☐
c.	Generate foresights about possible future states of the business environment.	☐	☐	☐	☐	☐

11. My organization emphasizes taking competitive actions.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
	☐	☐	☐	☐	☐

12. How do you rate your organization's means to keep track of the following interests relative to competitors?

		Poor	Below Average	Average	Above Average	Good
a.	Knowing current customers' needs and preferences.	☐	☐	☐	☐	☐
b.	Determining how much current customers' needs and preferences are changing.	☐	☐	☐	☐	☐
c.	Identifying the likely new sets of customers' needs and preferences.	☐	☐	☐	☐	☐
d.	Knowing what the competition is doing.	☐	☐	☐	☐	☐
e.	Anticipating what the competition is likely to do.	☐	☐	☐	☐	☐
f.	Ascertaining the strategic intent of the competition.	☐	☐	☐	☐	☐
g.	Analyzing both customer information and competitor information together to generate business insights.	☐	☐	☐	☐	☐

13. Does your organization have any plans to improve its means to do the following?

		Do Not Know	No Plans	Maybe	Some Plans	In Progress
a.	Keep track of changing customers' needs and preferences.	☐	☐	☐	☐	☐
b.	Keep track of competitors and their competitive position.	☐	☐	☐	☐	☐

Background Information

Please fill in the spaces provided or select (or the most closely related) response where appropriate.

1. Your job title: ☐

2. How many years have you worked in your organization?

<3	3-5	6-10	11-20	>20
☐	☐	☐	☐	☐

3. How many years has your organization been in operation?

<5	5-10	11-20	21-50	>50
☐	☐	☐	☐	☐

4. Which type of industry sector is your organization most active in?

☐ Biomedical Sciences/ Healthcare	☐ Chemicals/ Oil/ Gas	☐ Construction/ Property/ Real Estates
☐ Education Services	☐ Electrical/ Electronics	☐ Energy/ Environment/ Water
☐ Engineering / Manufacturing	☐ Hospitality/Tourism	☐ IT/ Media/ Communications Technology
☐ Lifestyle Products & Services	☐ Trading/ Retailing	☐ Transportation/ Logistics
☐ Wholesale	☐ Others:	

5. How many employees are there in your organization?

<10	10-19	20-99	100-500	>500
☐	☐	☐	☐	☐

6. Which type of business entity is your organization?

☐ Sole Proprietorship/ Partnership	☐ Private Limited	☐ Government
☐ Public	☐ Non Profit	

7. Are there any comments you would like to give?

8a.	Are you willing to discuss your responses?	Yes ☐	No ☐
8b.	Would like a copy of the key survey findings?	Yes ☐	No ☐

If 'Yes' to any of these two questions, please provide your contact information

First Name	
Last Name	
Work Phone	
E-mail	

~ Thank You ~

Appendix C1:

T-tests Outcome for Assessing Significance Difference between Responses from Online Survey and Those from Postal Mail Survey

Measures	Online Mean	Postal Mail Mean	Sig. (2-tailed) 95% CI
Organisational Performance			
Sales Growth	3.89	3.85	0.768
Net Profit Growth	3.77	3.81	0.805
Sales Turnover	3.79	3.78	0.937
Return on Equity	3.76	3.76	0.994
Formulation-Implementation Balance			
Ready Posture	4.42	4.39	0.636
Internal Changes	3.90	3.95	0.645
Iterative Approach	3.97	3.96	0.955
Alter Strategy	4.29	4.29	0.941
Real-time Responses	4.24	4.28	0.660
Responsive Culture	4.18	4.30	0.188
Capitalise Opportunities	4.28	4.29	0.892
Business Foresights	4.27	4.25	0.772
Receptive Culture: Autonomous Orientation			
Own Decisions	3.72	3.79	0.517
Timely Action	3.91	3.92	0.931
Decision-making	3.15	3.10	0.694
Personal Risks	3.10	3.07	0.818
Self-driven	3.74	3.71	0.742
Receptive Culture: Improvement Orientation			
Improve Ways	3.87	3.84	0.801
New Ways	3.54	3.60	0.606
Review Performance	4.18	4.25	0.475
Probe Causes	4.05	4.05	0.927
New Policies	3.77	3.74	0.737
Proactive Capabilities: Adaptive Capability			
Integrate Resources	3.82	3.81	0.926
Align Resources	3.88	3.85	0.762
Build Resources	3.52	3.64	0.260
Reconfigure Resources	3.64	3.88	0.028
Adapt Product-Market	3.80	3.75	0.582

Measures	Online Mean	Postal Mail Mean	Sig. (2-tailed) 95% CI
Adaptive Capabilities: Innovative Capability			
Innovative Approaches	3.76	3.86	0.353
Translate Learning	3.74	3.76	0.844
Innovation Systems	3.39	3.53	0.260
Innovation Processes	3.49	3.51	0.853
Exploit Connections	3.60	3.51	0.414
Proactive Capabilities: External Intelligence Capability			
Share Information	3.85	3.84	0.979
Information Exchange	4.04	3.87	0.056
Formal Structure	3.61	3.71	0.311
Customer Insights	4.09	3.91	0.055
Competitor Insights	3.97	3.91	0.550
Environment Foresights	4.07	3.85	0.019
Competitive Actions	4.04	3.91	0.146

Appendix C2:

T-tests Outcome for Assessing Significance Difference between Early Responses and Late Responses

Measures	Early Responses Mean	Late Responses Mean	Sig. (2-tailed) 95% CI
Organisational Performance			
Sales Growth	3.90	3.80	0.465
Net Profit Growth	3.84	3.70	0.345
Sales Turnover	3.82	3.71	0.429
Return on Equity	3.77	3.74	0.843
Formulation-Implementation Balance			
Ready Posture	4.39	4.43	0.568
Internal Changes	3.99	3.81	0.139
Iterative Approach	3.99	3.90	0.417
Alter Strategy	4.30	4.26	0.645
Real-time Responses	4.25	4.29	0.680
Responsive Culture	4.24	4.29	0.577
Capitalise Opportunities	4.34	4.19	0.092
Business Foresights	4.28	4.20	0.357
Receptive Culture: Autonomous Orientation			
Own Decisions	3.80	3.67	0.258
Timely Action	3.93	3.90	0.803
Decision-making	3.17	3.01	0.259
Personal Risks	3.04	3.17	0.299
Self-driven	3.75	3.65	0.368
Receptive Culture: Improvement Orientation			
Improve Ways	3.86	3.84	0.837
New Ways	3.56	3.61	0.653
Review Performance	4.25	4.16	0.278
Probe Causes	4.09	3.97	0.209
New Policies	3.80	3.65	0.197
Proactive Capabilities: Adaptive Capability			
Integrate Resources	3.83	3.77	0.558
Align Resources	3.86	3.88	0.767
Build Resources	3.61	3.57	0.728
Reconfigure Resources	3.79	3.75	0.745
Adapt Product-Market	3.76	3.80	0.738

Measures	Early Responses Mean	Late Responses Mean	Sig. (2-tailed) 95% CI
Adaptive Capabilities: Innovative Capability			
Innovative Approaches	3.78	3.90	0.287
Translate Learning	3.70	3.86	0.172
Innovation Systems	3.41	3.61	0.117
Innovation Processes	3.50	3.51	0.955
Exploit Connections	3.49	3.67	0.122
Proactive Capabilities: External Intelligence Capability			
Share Information	3.82	3.90	0.519
Information Exchange	3.95	3.93	0.847
Formal Structure	3.64	3.72	0.466
Customer Insights	3.93	4.12	0.048
Competitor Insights	3.90	4.00	0.358
Environment Foresights	3.93	3.97	0.668
Competitive Actions	4.02	3.84	0.072

Appendix D1: Composite Reliability Value Test

The "composite reliability" is a measure of the overall reliability of a collection of heterogeneous but similar items, and is calculated using the following formula = [squared of (sum of lamda)] /[((squared of (sum of lamda))+(sum of theta)]

s/no	*construct name*	*lamda1*	*lamda2*	*lamda3*	*lamda4*	*lamda5*	*lamda6*	*lamda7*	*lamda8*	*theta1*	*theta2*	*theta3*	*theta4*	*theta5*	*theta6*	*theta7*	*theta8*	*sum of lamda*	*sum of theta*	*composite reliability value*
1	Organizational Performance (OP)	0.85	0.89	0.88	0.87	*n/a*	*n/a*	*n/a*	*n/a*	0.27	0.2	0.23	0.24	*n/a*	*n/a*	*n/a*	*n/a*	3.49	0.94	**0.93**
2	Formulation-Implemention Balance (FIB)	0.52	*n/a*	*n/a*	0.55	0.54	0.63	0.72	0.69	0.73	*n/a*	*n/a*	0.7	0.71	0.6	0.49	0.53	3.65	3.76	**0.78**
3	Autonomous Orientation (AO)	0.57	0.58	0.47	0.59	0.64	*n/a*	*n/a*	*n/a*	0.67	0.66	0.78	0.66	0.59	*n/a*	*n/a*	*n/a*	2.85	3.36	**0.71**
4	Improvement Orientation (IO)	0.71	0.66	0.54	0.56	0.59	*n/a*	*n/a*	*n/a*	0.5	0.57	0.7	0.69	0.66	*n/a*	*n/a*	*n/a*	3.06	3.12	**0.75**
5	Adaptive Capability (AC)	0.8	0.83	0.7	0.69	0.51	*n/a*	*n/a*	*n/a*	0.36	0.31	0.51	0.52	0.74	*n/a*	*n/a*	*n/a*	3.53	2.44	**0.84**
6	Innovative Capability (IC)	0.43	0.63	0.89	0.91	0.74	*n/a*	*n/a*	*n/a*	0.82	0.6	0.21	0.17	0.46	*n/a*	*n/a*	*n/a*	3.6	2.26	**0.85**
7	External Intelligence Capbility (EIC)	0.52	0.44	0.37	0.77	0.79	0.73	0.38	*n/a*	0.73	0.81	0.87	0.4	0.37	0.46	0.86	*n/a*	4	4.5	**0.78**

Remarks

1) Composite reliability values greater than 0.6 are desirable.
2) Based on the calculations above, all the composite reliability values are found to be greater than 0.6.
3) Therefore, it can be concluded that the respective set of indicators for each variable provided reliable measurement of the construct.

Appendix D2: Average Variance Extracted Test

The "average variance extracted" measures the amount of variance that is captured by the construct in relation to the amount of variance due to measurement error, and is calculated using the following formula = [(sum of squared lamda)]/[(sum of squared lamda) + (sum of theta)].

	construct name	*lamda1*	*lamda2*	*lamda3*	*lamda4*	*lamda5*	*lamda6*	*lamda7*	*lamda8*	*theta1*	*theta2*	*theta3*	*theta4*	*theta5*	*theta6*	*theta7*	*theta8*	*sum of squared lamda*	*sum of theta*	*average variance value*
1	Organizational Performance (OP)	0.85	0.89	0.88	0.87	*n/a*	*n/a*	*n/a*	*n/a*	0.27	0.2	0.23	0.24	*n/a*	*n/a*	*n/a*	*n/a*	3.0459	0.2234	**0.93**
2	Formulation-Implemention Balance (FIB)	0.52	*n/a*	*n/a*	0.55	0.54	0.63	0.72	0.69	0.73	*n/a*	*n/a*	0.7	0.71	0.6	0.49	0.53	2.2559	2.408	**0.48**
3	Autonomous Orientation (AO)	0.57	0.58	0.47	0.59	0.64	*n/a*	*n/a*	*n/a*	0.67	0.66	0.78	0.66	0.59	*n/a*	*n/a*	*n/a*	1.6399	2.2766	**0.42**
4	Improvement Orientation (IO)	0.71	0.66	0.54	0.56	0.59	*n/a*	*n/a*	*n/a*	0.5	0.57	0.7	0.69	0.66	*n/a*	*n/a*	*n/a*	1.893	1.9766	**0.49**
5	Adaptive Capability (AC)	0.8	0.83	0.7	0.69	0.51	*n/a*	*n/a*	*n/a*	0.36	0.31	0.51	0.52	0.74	*n/a*	*n/a*	*n/a*	2.5551	1.3038	**0.66**
6	Innovative Capability (IC)	0.43	0.63	0.89	0.91	0.74	*n/a*	*n/a*	*n/a*	0.82	0.6	0.21	0.17	0.46	*n/a*	*n/a*	*n/a*	2.7496	1.317	**0.68**
7	External Intelligence Capbility (EIC)	0.52	0.44	0.37	0.77	0.79	0.73	0.38	*n/a*	0.73	0.81	0.87	0.4	0.37	0.46	0.86	*n/a*	2.4952	3.194	**0.44**

Remarks

1) Average variance extracted values greater than 0.50 are desirable.

2) Based on the calculations above, values are found to be greater than 0.50 except for FIB (0.42) and AO (0.44).

3) If the value is greater than 0.50, it can be concluded that a substantially higher amount of variance in the indicators is captured by the construct compared to that accounted for measurement error.

4) Based on the calculated composite reliability values and average variance extracted values, the assessment of the measurement part of the model did not reveal any crucial deficiencies.

5) For the two cases of low variance extracted observed, it is noted that their composite reliability values comfortably exceed the 0.60 threshold.

6) On the whole, the assessment of measurement part of the model revealed good evidence of validity for the operationalizations of the latent variables.

Appendix E1: LISREL Output for Comprehensive-2 Model Estimation (14 Pages)

NOTE:
This appendix is included on pages 168-181 of the print copy of the thesis held in the University of Adelaide Library.

Appendix E2: LISREL Output for Parsimonious-2 Model Estimation (13 Pages)

NOTE:
This appendix is included on pages 182-194 of the print copy of the thesis held in the University of Adelaide Library.