CHAPTER 6

DISCUSSION

6.0 INTRODUCTION

In this chapter, the findings of each variable are discussed extensively. The chapter begins with a summary of the overall findings of the study based on the empirical analysis presented in Chapter Five. The discussion on the findings is presented according to the research questions. Using this approach, the discussion is presented in a sequential manner which relates the intention of the study and the findings generated from the analysis. This will ease understanding of the research and the interpretation of the findings. Finally, the discussion on the resulting research model encapsulates the discussion of the research.

6.1 SUMMARY OF THE RESEARCH FINDINGS

The first task in the analysis process was to examine the relationship between the main variables that formed the framework for the research. The significance of results concerning direct relationships between variables was mixed. As summarised in Table 6.1, most of the relationships were supported; however three direct relationships and one mediated relationship were not supported. The direct relationship between prospector strategic orientation and performance was not significant and, therefore, was not supported, while the relationship between prospector strategic orientation and socialisation capabilities was significant, but in an opposing direction. In another direct relationship, the negative relationship

postulated between socialisation capabilities and explorative learning was also not only insignificant, but in the opposing direction. In terms of mediation analysis, partial mediation of explorative learning that was postulated to occur between prospector strategic orientation and performance was not supported. This may be explained by the insignificant direct relationship between prospector strategic orientation and performance, resulting in a full mediation model instead of a partial mediation model between prospector strategic orientation, explorative learning and performance.

Table 6.1
Result Summary of the Hypothesised Relationships

Hypothesis	Findings
1a. Prospector strategic orientation is positively related to performance	Not supported
1b. Explorative learning is positively related to performance	Supported
2a. Prospector strategic orientation is positively related to explorative learning	Supported
2b. Prospector strategic orientation is negatively related to system capabilities	Supported
2c. Prospector strategic orientation is positively related to coordination capabilities	Supported
2d. Prospector strategic orientation is negatively related to socialisation capabilities	Not supported
3a. System capabilities are negatively related to explorative learning	Supported
3b. Coordination capabilities are positively related to explorative learning	Supported
3c. Socialisation capabilities are negatively related to explorative learning	Not supported
4a. Explorative learning partially mediates the relationship between prospector strategic orientation and performance	Not supported
4b. System capabilities partially mediate the relationship between prospector strategic orientation and explorative learning	Supported

Table 6.1, continued

Hypothesis	Findings
4c. Coordination capabilities partially mediate the relationship between prospector strategic orientation and explorative learning	Supported
4d. Socialisation capabilities partially mediate the relationship between prospector strategic orientation and explorative learning	Supported
4e. Explorative learning fully mediates the relationship between system capabilities and performance	Supported
4f. Explorative learning fully mediates the relationship between coordination capabilities and performance	Supported
4g. Explorative learning fully mediates the relationship between socialisation capabilities and performance	Supported
5a. Both combinative capabilities and explorative learning mediate the relationship between prospector strategic orientation and firm performance	Supported

6.2 DISCUSSION OF THE FINDINGS

The discussion and interpretations of the findings are presented on the basis of the research questions raised by the study.

6.2.1 Research Question 1

Research Question	Hypotheses	Findings
Do prospector strategic orientation and explorative learning determine firm performance?	1a. Prospector strategic orientation is positively related to performance	Not supported
	1b. Explorative learning is positively related to performance	Supported

6.2.1.1 The Relationship between Prospector Strategic Orientation and Performance

The proposition that strategy leads to performance is not evident in this study. The findings did not support the positive hypothesised relationship between prospector strategic orientation and performance. As noted by Conant et al. (1990), findings from many studies examining the relationships between strategic types and performance found that organisational performance of defender, prospector, and analyser types are equal but higher than the reactor because the classification of these strategic types is not meant to reflect how well organisations perform but is based on how organisations perceive what they have to do (Woodside et al., 1999). Indeed, a meta-analysis by Ketchen et al. (1997) found that only eight percent of firm performance can be explained by strategic group membership. For example a study on Japanese companies found that membership in any one of the strategy cluster was not a significant predictor of performance (Kotabe & Duhan, 1993).

Initially, this study proposes a positive relationship based on previous findings that suggested prospector strategic orientation is positively related to sustainability (Jennings & Zandbergen, 1995), greater gains in market share, sales growth and new product sales when compared to other strategic types (Matsuno & Mentzer, 2000). Based on this argument, this study suggests that firms are compelled to adopt a prospective stance in competing in a dynamic environment. However, from contingency and resource-based perspectives, it is the alignment of strategic orientation and the internal repertoire of firms that will determine variation in performance (Beer et al., 2005; Gimenenz, 2000; Naman & Slevin, 1993).

Therefore, the concerns in the discussion of strategic types are to discover what the contingent factors are, and how these factors influence performance. The findings of this study supported this line of argument, believing that the alignment between strategy and internal mechanisms is critical in performance determination. The rejection of the null hypothesis actually confirms the subsequent mediation hypotheses that strategy is not directly linked to organisational performance, but rather depends on the full mediation of combinative capabilities and explorative learning, to performance.

6.2.1.2 The Relationship between Explorative Learning and Performance

Based on SEM, explorative learning was found to positively affect performance. This finding is in line with that of Teece et al. (1997) who suggested exploration for new knowledge is critical in achieving competitive advantage. This assertion is also supported by findings from Van Deusen and Mueller (1999) who were able to demonstrate that the highest performers in acquisition activities were those with high exploration. The literature argues that in a dynamic environment, firms that have the ability to engage in exploration while improving existing routines through exploitation are the ones that will survive in the long term (Levinthal & March, 1993; March, 1991).

Since innovation is also related to long-run survival, studies have attempted to relate exploration to innovativeness. With respect to this relationship, researchers have found a significant influence of explorative learning on innovation (Geiger & Makri, 2006; Laforet, 2008). According to Cohen and Levinthal (1990), the acquisition of

external knowledge is very important in the innovation process in order to stimulate new ways of thinking. Since explorative learning was found to be important in developing innovative capabilities, there is an implication that explorative learning contributes to improvement in performance. This is further supported by findings from Sidhu et al. (2003) who showed that new product development success is more apparent in firms with greater prospector orientation. On the other hand, Jansen et al. (2006) found a positive relationship between exploration and financial performance when dynamism is high. This study specifically indicates that environmental dynamism determines the importance of pursuing exploration, thereby suggesting the relevance of exploration to prospector oriented firms. Since explorative learning involves the sharing of tacit knowledge, the positive relationship between sharing tacit knowledge and performance, as found by Keskin (2005) gives further support for the impact of explorative learning on performance.

6.2.2 Research Question 2

Research Question	Hypotheses	Findings
Does prospector strategic orientation determine the extent of combinative capabilities and explorative learning required?	2a. Prospector strategic orientation is positively related to explorative learning.	Supported
	2b. Prospector strategic orientation is negatively related to system capabilities	Supported
	2c. Prospector strategic orientation is positively related to coordination capabilities.	Supported
	2d. Prospector strategic orientation is negatively related to socialisation capabilities	Not supported

6.2.2.1 The Relationship between Prospector Strategic Orientation and Explorative Learning

The positive relationship between prospector strategic orientation and explorative learning as postulated in this study was supported by the findings. This outcome is consistent with that of prior studies that have ventured into this relationship (e.g. Auh & Menguc, 2005; Sidhu et al., 2004). Miles and Snow (1978) describe prospectors as systematically adding new products and new markets and this requires monitoring a wide range of environmental conditions, trends, and events. This proposition indicates the importance of the exploration of new systems, discovering new technologies, and experimenting with new techniques in the quest for competitive advantage. This is consistent with Sidhu et al. (2004) that found a positive relationship between environmental dynamism and explorative learning. The greater need for an expanded information search in a dynamic environment justified the importance of explorative learning to prospector-oriented firms. Conclusively, prospector strategic orientation is positively related to explorative learning due to the dynamism of the environment in which the firm operates that requires firms to explore opportunities and manage risky investment in innovation.

As concluded by Olson et al. (2005) from their study concerning strategic orientation and marketing capabilities, prospector orientation involves discovering the unarticulated needs of customers in order to uncover new market opportunities. Both aspects of forecasting customer behaviour involve explorative learning. According to Covin and Slevin (1997), when considering environmental dynamism, managers need to immerse themselves into strategic learning in order to maintain an effective alignment between strategy and the environment. In other words, firms that

invest more of their resources in exploration are able to develop innovative capabilities and hence, improve their capacity to compete in the industry.

In a study that relates strategic types and types of performance measures, prospector strategy was found to interact with learning and growth measures extensively (Jusoh et al., 2006). The researchers involved argued that prospectors can achieve sustainable cost advantage through learning or the accumulation of experiences (Slater & Narver, 1993). This indicates that learning is more prevalent in prospector firms and thus, a positive relationship exists between prospector strategic orientation and explorative learning.

6.2.2.2 The Relationship between Prospector Strategic Orientation and System Capabilities

The findings of this study revealed that prospector strategic orientation has a negative effect on system capabilities. This outcome is consistent with other studies that found formalisation to inhibit innovative behaviour (Lee et al., 2007). As suggested by the literature, in innovation-driven organisation, jobs are broadly defined and rarely rely on standard operating procedures. Instead, employees are encouraged to find better ways of performing tasks. A study by Covin and Slevin (1997) reported that emergent strategy formation processes require organic structures that provide flexibility, communicativeness, and decision-making speed in order to respond quickly with strategies that are suitable for the situation.

In line with previous research that suggested prospector strategic orientation requires organic structure (Covin & Slevin, 1989; Pleshko, 2007), prospector-oriented firms

are seen to have a negative relationship with system capabilities. According to Covin and Slevin (1989), organic structures allow rapid organisational response when external forces change the setting of competition. Furthermore, as noted by Ortenbald (2002), a learning organisation requires flexibility with a free flow of communication in order to maximise the extent of learning in the organisation. In line with this, a decentralised structure which confers greater empowerment and autonomy is more prevalent in prospector-oriented firms. This is further supported by findings from Khandwalla (1977) that in a volatile environment, the highly-performing firms were those that adopted organic structures.

The finding of this study is also in line with the arguments that the bold nature of prospector-oriented firms requires a mechanism that supports the quick processing of correct and extensive loads of information (Pleshko, 2007). Since formalisation is suggested to drive out creativity (Lenz & Lyles, 1983), and inhibit the pursuit of opportunities (Frederickson, 1986), high system capabilities are definitely not appropriate for prospector-oriented firms. This is supported by Gilson et al. (2005) who found that low standardisation facilitates the impact of creativity on performance. In line with this, firms which focus on innovation are found to be characterised by many specialists in decentralised and informal structures (Olsen et al., 2005). Hence, low system capabilities that promote flexibility and nurture creativity among employees that leads to greater innovativeness.

Although, many studies from organisational behaviour have lent weight to these findings, there are several studies (e.g. Ruekert & Walker, 1987; Shortell & Zajac, 1990) that have suggested that prospectors require a more formal planning system

than other strategic types in order to improve their responses to new market opportunities. They argue that formality should not be considered synonymous with rigidity and hence, be considered to potentially restrict the ability of prospectors to respond to changing circumstances. Although this proposition contradicts the conclusions of most findings, it does provide some indication of the importance of ambidexterity in organisational structures. Studies on ambidexterity have recently gained momentum due to the importance of balancing exploitation and exploration (e.g. Kale & Wield, 2008; Simsek, 2009), and this has occurred because of the general consensus that a balance between exploration and exploitation is essential (Auh & Menguc, 2005; Liu, 2006; March, 1991; Wang, 2008) to achieve above-average performance and to maintain competitiveness in the industry.

6.2.2.3 The Relationship between Prospector Strategic Orientation and Coordination Capabilities

The findings of this study suggested that the relationship between coordination capabilities and prospector strategic orientation is positive. This is in line with the initial findings in this study that suggested firms with prospector strategic orientation require flexibility and decentralisation. Both flexibility and decentralisation require effective coordination to integrate multiple expertise from different functions to generate a synergistic effect in the implementation of projects or tasks (Gatignon & Xuereb, 1997; Kohli & Jaworski, 1990). Furthermore, as communication is suggested to be more complex in prospectors, the possibility of conflict is more apparent and this requires an effective coordination mechanism to resolve conflicts.

Another aspect of concern is the high participation expected in prospector-oriented firms. The nature of prospector firms that encourage ideas and opinions may result in complexity that needs to be coordinated. In a study by Ruekert and Walker (1987) on interdivisional relationship based on the Miles and Snow (1978) typology, it was found that participatory mechanisms were positively correlated with perceived effectiveness of the relationship between divisions, especially in prospector organisations. Moreover, Gatignon and Xuereb (1997) suggested that the strategic orientation and level of inter-functional coordination within a firm can influence the firm's ability to make a new product successful. This study found that inter-functional coordination was positively associated with strategic orientation, especially strategy that focused on customers and competition.

In line with what has been suggested by Beer et al. (2005), the maintenance of alignment between firm's strategy and internal mechanisms requires a collaborative process that is supported by some coordination mechanisms. With the capabilities to coordinate teams, functions, and departments, firms are better able to implement their intended strategies that are obviously formulated with the aim of achieving their desired goals. Therefore, coordination capabilities are essential in order to align strategy and performance.

6.2.2.4 The Relationship between Prospector Strategic Orientation and Socialisation Capabilities

The relationship between prospector strategic orientation and socialisation capabilities was not supported. The findings showed that the relationship was significantly positively related, instead of negatively related as proposed in the

hypothesis. In their study of collaboration as a knowledge management enabler, Lee and Choi (2003) suggested that supportive and reflective communication helps to develop shared understanding about the external and internal environment of the firm. The study proposed that without shared understanding, the creation of knowledge would be limited. This is supported by the work of Linnarson and Werr (2004) who found that firms that work to achieve radical innovation promote open communication that will allow them to respond to competition and market change.

In another aspect, socialisation is considered as an antecedent of knowledge sharing and therefore important in developing innovativeness (Caloghirou, Kastelli & Tsakanikas, 2004). As found by Subramaniam and Youndt (2005), the interaction between human and social capital through socialisation positively influences radical innovative capability. Peng et al. (2004) also suggested that firms that are able to achieve greater socialisation through within groups and between groups interaction, generate strong group identity. Strong group identity is especially important for developing the learning relationships that are necessary to build the platform for knowledge sharing. The process of socialisation will eventually lead to the development of a "community of innovation" (Carayannis et al., 2000) which is important to prospector strategic- oriented firms.

The importance of socialisation in knowledge sharing is more critical when firms rely more on tacit knowledge. The synthesis of disparate tacit knowledge across a firm requires greater socialisation capabilities to coordinate and integrate knowledge (Carayannis et al., 2000; Keil et al., 2004). As prospector strategic-oriented firms require flexibility and autonomy, the operation of tasks is less dependent on written

rules and procedures that dictate how tasks should be performed. High amounts of tacit knowledge are less susceptible to knowledge sharing if socialisation capabilities are low. Rather, firms need to create a shared social setting that will be the basis for developing and absorbing knowledge (Carayannis et al., 2000). Through socialisation, knowledge sharing can be maximised and innovativeness can be encouraged within the firm.

The arguments from the knowledge sharing and innovation perspectives have supported the positive relationship between socialisation capabilities and prospector strategic orientation. Although socialisation capabilities may have negative effects on prospector strategy in the context of information search (Nahapiet & Ghoshal, 1998), experimentation (Rodan, 2005), risk (Lester & Canella, 2006), and perception (Janis, 1982), apparently the positive effect was found to be stronger in this study. This finding is in line with the findings on the relationship between socialisation capabilities and explorative learning that will be explained in the following discussion.

6.2.3 Research Question 3

Research Question	Hypotheses	Findings
Do combinative capabilities determine the extent of a firm's explorative learning?	3a. System capabilities are negatively related to explorative learning	Supported
	3b. Coordination capabilities are positively related to explorative learning	Supported
	3c. Socialisation capabilities are negatively related to explorative learning	Not supported

6.2.3.1 The Relationship between System Capabilities and Explorative Learning

The finding in this study has confirmed the notion that effective learning requires alignment with organisational mechanisms (Liao, 2007; Ulrich et al., 1993). It was revealed that a negative relationship existed between system capabilities and explorative learning. This is in line with previous findings that formalisation, as seen in system capabilities, reduces the variability of performance (Kang, Morris & Snell, 2007). Findings by Linnarson and Werr (2004) also generate a similar conclusion, that flexibility and open communication are required to encourage exploration. In other words, formalised and hierarchical communication patterns inhibit the efforts of firms to engage in explorative learning (Lunnan & Barth, 2003).

In line with this, Van Deusen and Mueller (1999) suggested that the establishment of routines would only contribute to exploitative learning. On the other hand, explorative learning which requires more flexibility and cross-expertise interaction (Zollo & Winter, 2002), must be supported by greater autonomy and participation in decision-making. With respect to this, a study by McGrath (2001) confirmed that autonomy is positively related to exploration.

Although the findings on this study confirmed a negative relationship between system capabilities and explorative learning, mixed results have been reported in previous studies. For instance, a study by Jansen et al. (2006) found that formalisation did not reduce potential absorptive capacity which is related to exploration. The result gives an indication that well-designed rules and procedures also contribute to the development of capabilities to search and assimilate new

external knowledge (Adler & Borys, 1996). The findings indicated that if firms can codify tacit knowledge as soon as it is acquired, this enhances their ability to transform and exploit new external knowledge and to initiate recombinations in developing new competences and capabilities (Zollo & Winter, 2002). However, it is also argued that knowledge codification involves direct cost, time, and managerial attention (Cohen & Bacdayan, 1994), none or all of which may be available. Therefore, it is suggested that efforts directed to the codification of knowledge often lead to organisational inertia instead of driving firms to the effective and immediate use of newly-found knowledge.

Formalisation is also suggested to drive out creative and proactive behaviour (Frederickson, 1986) because creativity and the contribution of new ideas can only be enhanced in the presence of open and dense information flows (Amabile et al., 1996). With less formalisation, communication and interaction can be improved and this will stimulate the creation of new knowledge through recombinations and exploration (Damanpour, 1991). A study by Gilsing et al. (2005) also found that formalisation stifles the influence of creative team environments. This is supported by the findings of Lee and Choi (2003) that formalisation inhibits tacit-related activities such as socialisation that are important in knowledge creation.

Although the literature provides mixed evidence on the relationship between system capabilities and explorative learning, the majority of studies have concluded that formalisation, centralisation and low autonomy, will inhibit the pursuit of explorative learning. As found by Benner and Tushman (2003), formalisation through process management is not helpful, serving only to inhibit variability and

increase resistance to change. Therefore, the variance-seeking nature of exploration must be supported by flexible systems that confer autonomy and encourage participation. Hence, the finding of a negative relationship between system capabilities and explorative learning is sufficiently supported.

6.2.3.2 The Relationship between Coordination Capabilities and Explorative Learning

The findings supported the hypothesis of a positive relationship between explorative learning and coordination capabilities. As prospectors are postulated to require decentralised and flexible structures, these structures must be supported by sufficient coordination capabilities. Furthermore, scholars have deliberately suggested that firms competing in uncertain environments require greater interdependence between divisions to optimise their use of knowledge (Duncan & Weiss, 1979). This is more compelling for a prospector strategic orientation that relies on less formalisation and decentralisation, and the need for coordination and integration of knowledge within and across firms. According to Siggelkow and Rivkin (2006), higher interdependencies resulting from exploration require a greater level of coordination, especially at the top of the organisational hierarchy. This is supported by McNamara and Fuller (1999) who suggested that in order to move from exploitation to exploration, the development of capabilities at two levels is required: the operational level requires new capabilities in interdisciplinary research, and the upper management level requires capabilities in managing collaboration.

Since exploration is more pertinent in firms which operate in highly risky and uncertain endeavour, the use and search of market information requires a high degree

of inter-functional coordination. Explorative learning which is positively related to radical innovation (Gima, 2005) will have to deal with uncertainties and risks in deploying both existing and new competencies. To accomplish this, greater inter-functional coordination is important as this will involve interaction from individuals from different functional areas and cross-expertise interaction (Zollo & Winter, 2002) especially in efforts to recombine existing competencies with new ones in developing new solutions (Zahra & Nielson 2002). As such, inter-functional coordination will determine the differential capacities of firms in explorative learning efforts.

Exploration requires the stimulation of knowledge creation through an injection of internal and external diversity. The findings from Jansen et al. (2005) showed that coordination capabilities are positively related to the potential absorptive capacity that is required in the exploration of external knowledge. As emphasised by Benner and Tushman (2003), the importance of creating loosely-coupled sub-units to accommodate diversity and experimentation, must be supported by an efficient coordination mechanism. Furthermore, Galunic and Rodan (1998) suggested that the transfer of tacit knowledge can be achieved by moving employees to different areas in the firm to increase socialisation. This process will evidently require effective coordination mechanisms in order to generate the positive results that is needed to inspire new combinations of knowledge.

The arguments that exploration requires dense interaction to promote recombinations of knowledge that leads to synergistic outcomes, also support the positive relationship between coordination capabilities and explorative learning.

Dense social relationships within and across divisions require effective coordination machinery, but once in place, it should yield multiple benefits (Jansen et al., 2006). As found in several studies, connectedness shows a significant positive effect on explorative learning (Keil et al., 2004; Jansen et al., 2006; Lunnan & Barth, 2003). Since in explorative learning, higher tacit knowledge is involved, socialisation becomes more important especially in knowledge articulation, knowledge transfer, and knowledge integration. Due to this, coordination mechanisms are more important in firms that focus their resources on explorative learning (Lam, 2000). In addition, knowledge diversity based on absorptive capacity and experience, increases the need for coordination capabilities (McNamara & Fuller, 1999) to ensure that explorative learning will lead to greater new product creativity. The knowledge sharing benefit from inter-functional coordination ensures that the collective assimilation of knowledge from different divisions generates positive outcomes for firms. In fact, by increasing the level of connectedness among divisions, inter-functional coordination ensures the effective use of new knowledge and competencies to engender radical innovation outcomes (Gima, 2005).

6.2.3.3 The Relationship between Socialisation Capabilities and Explorative Learning

In respect to socialisation capabilities, this study hypothesised that their relationship with explorative learning would be negative due to the argument that inter-organisational socialisation capabilities inhibit explorative orientation. Actually, although the relationship was found to be insignificant, it is interesting to note that the direction of the relationship is positive. This is consistent with the significant positive relationship found between prospector strategic orientation and socialisation

capabilities as presented in the earlier part of the chapter. The premise of the negative relationship as proposed by March (1991) is based on the requirement of explicit knowledge in explorative learning since explorative learning is measured by boundary-spanning information acquisition (or distant search). The centrality of information acquisition to exploration is framed as the importance of gaining fresh information to improve present and future returns in rational choice (Radner & Rothschild, 1975), and bounded rationality models (Simon, 1955). What is being left out in March's model of exploration and exploitation (1991) is the role of interpersonal learning and tacit knowledge in knowledge creation (Miller et al., 2006). Local search (organisational level exploration) requires dense social interaction and proximity to generate internal knowledge creation and integration. The search process itself is highly tacit and, therefore, socialisation mechanisms are important to ensure the effectiveness of the process. Moreover, in the process of knowledge transfer, 'intimacy' and ease of communication are important, especially in knowledge that has greater tacit components (Szulanski, 1996).

In fact, many findings from past studies reported a positive significant relationship between social interactions and explorative learning. In a case study by McNamara and Fuller (1999), a high degree of social interaction was suggested to be important to transfer tacit knowledge (Nonaka, 1994). Additionally, findings from a study by Jansen et al. (2006) also showed a positive relationship between connectedness and exploratory innovation. This indicates that dense social relations within organisational units positively influence the acquisition and assimilation of new external knowledge. The idea is that close proximity is an informal mechanism that encourages knowledge transfer (McNamara & Fuller, 1999). Furthermore, socially-

dense relationships foster shared language and common codes that encourage knowledge creation and integration across organisations (Blacker, 1995; Nonaka & Takeuchi, 1995). Shared understanding in terms of organisational mission was also found to positively influence explorative learning (Sidhu et al., 2004). All in all, the impact of social capital is seen to be greater in explorative learning (Vanhaverbeke et al., 2004).

In line with this, higher socialisation capabilities were also suggested to influence trust that is required to facilitate open, and substantive knowledge exchange (Lee & Choi, 2003). Furthermore, it is believed that trust encourages knowledge creation by creating a conducive climate for interaction between cross-functional and inter-organisational teams (Hedlund, 1994). Not only is trust important within firms, but it is also a pre-requisite for gaining access to external knowledge which is located with other players in the industry (Carayannis et al., 2000). Hence, socialisation is important for both knowledge acquisition from external sources and for knowledge integration within the firm.

In relation to trust, a low level of turnover was also found to improve learning (Rodan, 2005). This finding indicates that learning is positively related to socialisation since knowledge sharing and transfer are influenced by trust which is developed through time and multiple interactions (Gilsing & Nooteboom, 2006). Furthermore, the inclusion of experimentation in the measurement of exploration increases the role of socialisation capabilities to generate a knowledge sharing culture that will encourage an exploration orientation.

Although some studies suggest that low connectedness increases access to diverse knowledge sources, this is not sufficient to maintain a regular and reliable flow of knowledge (Hansen, 1999), and it is believed that dense relationships between units motivate employees to offer assistance to each other. Moreover, the two-way interaction helps to facilitate the interpretation and understanding of new external knowledge (Cohen & Levinthal, 1990; Morrison, 2002).

In conclusion, the findings of this study establish the relationship between explorative learning and combinative capabilities. Prior research has suggested that formal structure and systems, sources of coordination and expertise and behaviour-framing attributes of the organisational context, all influence the number of attempts to transfer knowledge and the outcomes of those attempts (Burgelman, 1983; Ghoshal & Bartlett, 1994; Szulanski, 1996). The hypotheses that postulate a positive relationship between explorative learning and coordination capabilities, and a negative relationship with system capabilities were well supported. However, the negative relationship predicted in the hypothesis between explorative learning and socialisation capabilities was not supported. In fact the direction of the relationship was found to be positive, although insignificant. The findings gave support to the ambidexterity hypothesis that suggests the importance of developing a structure that is sufficiently flexible to encourage innovativeness but yet possesses some elements of control through coordination and connectedness (Jansen et al., 2005). The following discussion will focus on the findings concerning the mediating hypotheses that will explicate the roles of explorative learning and combinative capabilities in the strategy-performance relationship.

6.2.4 Research Question 4

For the purpose of the following discussion, Research Question 4 is divided into two parts. The first part focuses on the mediating role of explorative learning; and the second part concentrates on combinative capabilities as the mediating factor in the strategy-learning relationship.

Research Question	Hypotheses	Findings
Do combinative capabilities and explorative learning act as the contingent factor in the strategy-performance relationship?	4a. Explorative learning partially mediates the relationship between prospector strategic orientation and performance.	Not supported
	4b. Explorative learning fully mediates the relationship between system capabilities and performance.	Supported
	4c. Explorative learning fully mediates the relationship between co-ordination capabilities and performance.	Supported
	4d. Explorative learning fully mediates the relationship between socialisation capabilities and performance.	Supported

6.2.4.1 The Mediating Role of Explorative Learning in the Prospector Strategic Orientation–Performance Relationship

Explorative learning was found to fully mediate the relationship between prospector strategic orientation and performance. In other words, the hypothesised relationship of the partial mediation of explorative learning in this relationship was not

supported. The proposition of partial mediation is in line with the initial hypothesis that suggested a significant positive relationship between prospector strategic orientation and performance. Since the mediation result was not supported, this provides further evidence that strategic orientation alone will not determine performance. This is supported by several past studies that found firm performance not to be influenced by strategic group membership (Ketchen et al., 1997; Kotabe & Duhan, 1993).

The findings of this study supports the alignment proposition that strategy alone does not cause a significant impact on performance, but rather it requires proper alignment with other variables. The result of the full mediation of explorative learning in the strategy–performance relationship supports the conclusion drawn by Conant et al. (1990) that strategic types are not intended to reflect how well organisations perform; but rather it is the alignment of the strategic orientation and the internal repertoire of the firms that leads to superior performance. According to Beer et al. (2005), firms need to attain fitness by building the capacity to learn which is pertinent in maintaining alignment between the environment, strategies and capabilities. Therefore, the findings provide support that alignment is the formula of success for firms. On the other hand, the findings also confirmed that learning acts as a contingent factor that cannot be excluded in strategy-performance discussions. As argued by the organisational learning literature, as the rate of environmental change increases, explorative learning becomes more important in order to cope with increasing complexity and to always be ready for drastic change (Brown & Eisenhardt, 1998).

The arguments of full mediation can be viewed from two perspectives. Firstly, since prospector strategic orientation is more relevant in a dynamic environment, firms need to have the rigour to compete in this volatile, competitive landscape. Evidently, firms must fulfil the criteria of innovativeness and this requires that they engage extensively in explorative learning. On the other hand, the search for knowledge by firms is also contingent upon environmental dynamism, technological phase, and innovation opportunities (Sidhu et al., 2007). According to Sidhu et al. (2007), a dynamic environment requires a greater spatial search of knowledge (exploration) and this has a positive effect on innovativeness. Therefore, the necessity of explorative learning is more prevalent in prospector strategic-oriented firms since both are based on the dynamic aspects of the environment. As Gatignon and Xuereb (1997) concluded, the development of new products in highly uncertain environments requires extensive information gathering through market scanning and networking in order to identify customer needs. Conclusions from past studies in strategic management and organisational learning literature supported the notion that in dynamic environment, firms are required to be prospective, and to be prospective, firms need to be explorative, and the fulfilment of this condition will lead to innovativeness that will yield better performance (e.g. Beer et al., 2005; Gatignon & Xuereb, 1997; Sidhu et al., 2007). The findings of this study are also consistent with the findings from a study of electronics firms in China (Gima, 2005) showing that exploration fully mediates the effects of competitor orientation and innovation performance.

Secondly, from the institutional perspective, studies have found that strategic orientation shaped the information requirements and skill needs, and this is

supported by the extent of board members' diversity (Beekun & Ginn, 1993), and managerial characteristics (Thomas & Ramaswamy, 1996). Accordingly, as a firm adopts a more prospective strategic stance, the need to restructure the board of directors becomes more compelling, and the need to align the profiles of the top managers becomes more essential to suit the strategic requirements. The basic reason is that knowledge diversity contributes to the extent of knowledge exploration. Another argument presented from the institutional perspective originated from the power implications of following a certain strategy. It was suggested that in order to tackle an organisation's critical contingencies, knowledge and expertise are both important in gaining control of the strategy which will ensure the survival of firms. Findings from this perspective illustrate the mediating relationship of explorative learning and prospector strategic orientation in determining performance.

6.2.4.2 The Mediating Role of Explorative Learning in the Combinative Capabilities–Performance Relationship

Based on the results, explorative learning was found to fully mediate the relationship between combinative capabilities and performance. This is expected since discussion on combinative capabilities in prior studies did not relate it directly to performance. As found in the study by Sidhu et al. (2007), formalisation as measured in system capabilities did not display a clear relation to innovation success. The result in respect of direct relationships was not significant for any of the components of combinative capabilities to performance. This justifies the findings that explorative learning fully mediates the relationship between system, coordination, and socialisation capabilities with performance.

However, combinative capabilities are seen more as a facilitating variable, facilitating the other factors such as learning-related constructs, in order to achieve better performance. For instance, Van den Bosch et al. (1999) proposed a model that relates combinative capabilities to absorptive capacity, which is argued as important in exploration. As asserted by Bhatnagar (2006), experimentation and creativity can be further developed with the support of organisational mechanisms. In line with this, Day and Schoemaker (2005) suggested that the learning process can be catalysed by a firm's organisational mechanisms that support the acquisition, absorption, interpretation and transfer of knowledge.

In this study, explorative learning was found to fully mediate the relationship between system, coordination and socialisation capabilities, with performance. This leads to the conclusion that in the process of aligning strategy to performance, it is important to identify the right mixture of combinative capabilities that will support the appropriate learning approach. Since combinative capabilities do not directly influence performance, it becomes more critical to develop appropriate organisational mechanisms to support learning in order to achieve greater performance. Therefore, the findings in respect of mediation, stress the importance of having the right mix of combinative capabilities to increase the potential and capacity of learning.

6.2.4.3 The Mediating Role of Combinative Capabilities in the Prospector Strategic Orientation–Explorative Learning Relationship

Research Question	Hypotheses	Findings
Do combinative capabilities and explorative learning act as the contingent factor in the strategy-performance relationship?	4e. System capabilities partially mediate the relationship between prospector strategic orientation and explorative learning.	Supported
	4f. Coordination capabilities partially mediate the relationship between prospector strategic orientation and explorative learning.	Supported
	4g. Socialisation capabilities partially mediate the relationship between prospector strategic orientation and explorative learning.	Supported

In this study, the proposal of partial mediation of combinative capabilities in the prospector strategic orientation-explorative learning relationship was supported in all types of combinative capabilities. This result complements the prior finding that revealed explorative learning as fully mediating the relationship between combinative capabilities and performance. The findings are based on a significant positive direct relationship between prospector strategic orientation and explorative learning, and also on significant relationships between all three components of combinative capabilities to prospector strategic orientation.

In this study, prospector strategic orientation is argued to positively relate to explorative learning based on the arguments of environmental dynamism. Explorative learning is suggested to be more apparent in firms with a prospector stance since the environment dictates the extensiveness and the types of information

required. In structural studies, prospector-oriented firms are suggested as developing structures that enhance flexibility and autonomy in order to suit the nature and requirement of the strategy (Burns & Stalker, 1961). This is supported by Khandwalla (1977) who found that industries in intense, diverse, and shifting competitive environments adopted organic structures.

With respect to this, the findings from this study provided support for the notion that prospector strategic orientation is negatively related to system capabilities, and positively related to coordination and socialisation capabilities, and the direction of the relationship is also similar between combinative capabilities and explorative learning. For instance, studies on small and medium-sized firms revealed a positive relationship between prospectors and flexible management practices (Laforet, 2008; Sanchez & Marin, 2005). A study by Gatignon and Xuereb (1997) suggested that the strategic orientation and level of inter-functional coordination of a firm can influence the ability of the firm to make a new product successful. Finally, based on arguments of communication (Linnarson & Werr, 2004) and knowledge sharing (Caloghirou et al., 2004), socialisation capabilities were vindicated as being positively related to prospector strategic orientation.

The findings on the direct relationships related to combinative capabilities lead to the conclusion that prospector strategic orientation determines the mix of combinative capabilities, and that this mix of combinative capabilities then determines the extent of explorative learning in the firm. The partial mediation result is in line with the findings by Gatignon and Xuereb (1997) that suggested inter-functional coordination enhanced the impact of strategic orientations in developing

innovations. Furthermore, March's model of learning (1991) is portrayed as being mediated by organisational codes which influence the effectiveness of learning. Based on these arguments, the partial mediation conclusion of combinative capabilities in prospector strategic orientation-explorative learning is appropriately supported.

6.2.5 Research Question 5

Research Question	Hypotheses	Findings
Do combinative capabilities and explorative learning mediate the relationship between prospector strategic orientation and firm performance?	5a. Both combinative capabilities and explorative learning mediate the relationship between prospector strategic orientation and firm performance	Supported

6.2.5.1 The Mediation of Combinative Capabilities and Explorative Learning in the Prospector Strategic Orientation - Performance Relationship

The proposition of alignment is based on the contingency perspective that advocates the concept of alignment as the success factor in strategy implementation. Based on Structural Equation Modelling (SEM), an acceptable structural model was achieved that justifies the conclusion that both combinative capabilities and explorative learning mediate the relationship between prospector strategic orientation and performance. This is in line with many prior studies that confirmed the validity of the alignment requirement in the strategy-performance relationship (e.g. Frederickson, 1986; Noble et al., 2002; Su et al., 2008).

The importance of learning constructs cannot be denied, especially in a dynamic competitive landscape (Barnett & Burgelman, 1996). In order to adapt to changing market conditions, learning is definitely required to rejuvenate firms in reshaping design, culture, structure, and processes. The extent of learning depends on the volatility of the competitive landscape. The more volatile the environment, the greater the exploration required by a firm in order to be innovative, a market leader, and a product pioneer. The need to pursue exploration must, however, be accompanied by capabilities that support exploration. Based on the literature, combinative capabilities were suggested to be important to facilitate learning (Jansen et al., 2005) and studies have confirmed that system, coordination and socialisation influenced the extent of learning (Galunic & Rodan, 1998; Gilson et al., 2005; Lee & Choi, 2003).

Therefore, in order to ensure long-term survival, firms need to establish support so that they can harness their potential through learning. Although some studies did attempt to relate explorative learning as a mediating factor in the strategy-performance relationship, the findings of this study not only provide support for the mediating role of learning, but also extend the understanding of aligning learning to the strategy-performance relationship. By incorporating combinative capabilities as another mediating variable, the argument of alignment is strengthened, and the understanding of contingent factors in the strategy-performance relationship is extended.

6.3 CONCLUSION

This chapter has presented a discussion of the findings of this study in light of prior research in the field. The discussion has presented arguments that explain the support for or against the findings, and was structured according to the research questions and the hypotheses generated to answer each of them. Findings concerning each relationship have been carefully explained and arguments presented to support their significance.

The chapter began with a discussion on the direct relationships between constructs, and in this connection most of the findings were consistent with those in previous research, with the exception of socialisation capabilities which were found to be insignificant in their relationship with prospector strategic orientation and explorative learning. However, this was not surprising since some proponents in the literature have argued for the possibility of an opposing direction in these relationships. The most important conclusion from this study is the mediating role of explorative learning and combinative capabilities in the strategy-performance relationship. The findings suggest full mediation of explorative learning between prospector strategic orientation and performance, and partial mediation of combinative capabilities in the strategy-learning relationship. The result of the mediation test supported the contingency framework as proposed in this research.

Finally, the discussion proceeded to the structural model of the study and provided a justification for the argued significance of the model. As mentioned, the findings of this study have not only confirmed learning as an important contingent factor in the strategy-performance relationship, but they also extend understanding of the

dynamics of learning in this relationship. In the next chapter, the discussion will concentrate on the theoretical and practical contributions of this study.