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Dynamic Capabilities and Firm Performance: Empirical Evidence from Small and Medium-Sized Accountancy Firms in the UK

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Dynamic Capabilities and Firm Performance: Empirical Evidence from Small and Medium-Sized Accountancy Firms in the UK

BY

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October 2017



***A thesis submitted in partial fulfilment of the University's
requirements for the Degree of Doctor of Philosophy (PhD)***



Certificate of Ethical Approval

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Charles Ambilichu

Project Title:

Dynamic capabilities as tools for survival and competitive advantage: Empirical evidence from small and medium-sized accountancy firms in the UK

This is to certify that the above named applicant has completed the Coventry University Ethical Approval process and their project has been confirmed and approved as Low Risk

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ABSTRACT

Background

With continuous change in the business environment in which SMPs operate in the UK, resulting in failure of many such firms, the importance of sustainable improvement in performance of these firms cannot be over emphasized. It is argued in this study that such improvement in performance is engendered by the firms' dynamic capabilities. Therefore this study was motivated by the need to identify the dynamic capabilities and evaluate how such competencies enable the firms to improve their long-term performance, notwithstanding environmental challenges, thereby filling the gap in the literature. It therefore sought to investigate the direct and indirect relationships between dynamic capabilities and performance as well as the relationships between dynamic capabilities.

A mixed research methods approach was adopted with quantitative data collected from 315 SMPs across the UK through a structured questionnaire, and analysed using SEM. The qualitative data was collected through semi-structured interviews conducted with 10 SMPs.

Key Findings & Implications

The results demonstrate that strategic leadership does not only have direct influence on ambidexterity of the firm, but that it also has indirect effects through organisational learning, and alliances & networks dynamic capabilities. This extends the results of previous research (e.g. Lubatkin et al. 2006).

The study also shows that the direct effect of strategic leadership on firm performance is positive but non-significant although its total effects are significantly positive. Theoretically, this implies that although strategic leadership as a first-order dynamic capability is important, it is only with the deployment of the other higher-order dynamic capabilities that the firm will maximise the effects of its dynamic capabilities on its performance.

Furthermore, SMPs use their alliances & networks primarily to learn and gain new knowledge, than as a direct source of innovativeness. It equally shows that, secondarily, SMPs use the services offered by network partners to diversify their service provision, thus impacting on the firm's innovativeness and on performance consequently.

The study illustrates that in the accountancy practice industry in the UK, environmental turbulence also includes legislative (regulatory) turbulence. This is important because although SMEs are required to comply with such changes, SMPs as their business service providers and consultants have to act promptly by deploying their DCs in order to address the challenges and seize opportunities brought about such changes.

In addition, SMPs can be split according to their growth orientation – growth oriented and non-growth oriented SMPs. This distinction is vital in understanding why certain SMPs do not seek new clients and may explain the attitude towards investing in, and deploying dynamic capabilities by firms. This distinction has implication for firms that decide to pursue or not to pursue growth.

Keywords: Dynamic capabilities, small and medium-sized accountancy firms, strategic leadership, innovativeness, ambidexterity, organisational learning, alliances/networks, firm performance.

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Furthermore, I would like to thank my family and friends for their invaluable support and encouragement. Finally and most importantly, I thank the good Lord for keeping me in good health and for His love and mercy.

DEDICATION

This is in honour of my son, Denzel Emmanuel, with much love. His astonishment that his dad was a student motivated me to work even harder.

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LIST OF ABBREVIATIONS

Abbreviation	Description
AAPA	The Association of Authorised Public Accountants
ACCA	The Association of Chartered Certified Accountants
BIS	Department for Business, Innovation and Skills
CC	Competition Commission
CIMA	The Chartered Institute of Management Accountants
CIOT	Chartered Institute of Taxation
CPA	Certified Public Accountants
CSR	Corporate Social Responsibility
DC	Dynamic Capability
DCs	Dynamic Capabilities
FRC	Financial Reporting Council
GNP	Gross National Product
HR	Human Resources
HRM	Human Resources Management
ICAEW	Institute of Chartered Accountants in England and Wales
ICAI	Institute of Chartered Accountants of Ireland
ICAS	Institute of Chartered Accountants of Scotland
ICPA	Institute of Certified Practising Accountants
IFAC	International Federation of Accountants
NARF	Norwegian Authorised Accountants
OCs	Ordinary Capabilities
OI	Organisational Innovation
OL	Organisational Learning
RBV	Resources Based View
SCT	Statutory Compliance and Taxation
SIC Code	Standard Industrial Classification of Economic Activities
SME	Small and Medium-sized Enterprises
SMP	Small and Medium-sized Accountancy firm
VFM	Value for Money

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CHAPTER 1: INTRODUCTION

1.1 RATIONALE FOR THE STUDY

Small and medium-sized accountancy firms (SMPs) operate in the accountancy industry which is characterised by a clear demarcation between the Big 4 accountancy firms (hereafter called the Big 4),¹ the mid-tier firms,² and a substantial number of medium-sized firms and thousands of smaller firms and sole practitioners (Palmer and Fielding 2014). With a national (and often global) network of offices, clients of the bigger accountancy firms are typically large businesses and government departments (Palmer and Fielding 2014). Smaller accountancy firms focus on service areas such as accountancy, tax or business advice, and operate in particular locality and/or sector with typical clients being SMEs.

Because of the wide range of products and services small and medium-sized enterprises (SMEs) provide, as well as their disproportionately large contribution to job creation and the workforce employed by these firms (BIS³ 2014), they form the bedrock on which the entire UK economy thrives. Yet the contributions of these SMEs to the economy is made possible by the business support services (compliance and non-compliance) provided largely by SMPs.⁴

Accountants are financial advisers of choice for SMEs (Schizas, Jarvis, and Daskalakis 2012), in UK and Australia, in the provision of statutory compliance and tax (SCT) services, with most owners/managers also sourcing non-SCT (advisory) services from external accountants (Blackburn, Carey, and Tanewski 2010). Although accountants are considered experts in financial management (ACCA 2013) SMEs' demand for advisory service is a result of business pressures faced by management (Blackburn, Carey, and Tanewski 2010).

The importance of SMPs to the economy is not only underlined by the customised business services provided to the satisfaction of SME clients, but also by the fact that their existence makes possible the availability of a wide ranging choice to SMEs, in the procurement of business advice. Thus considering the importance of SMEs to the economy, and SMPs as

¹ These are: PricewaterhouseCoopers, KPMG, Deloitte and Ernest & Young.

² The mid-tier firms are those accountancy firms that are just below the Big 4 firms, and include Grant Thornton, BDO, RSM, Moore Stephens, Mazars, and PKF.

³ Department for Business, Innovation and Skills

⁴ SMPs being the largest providers of business support services to, and taken up by, SMEs in UK.

their preferred provider of business support services, it is important for SMPs to thrive. However, the reality is that internal and external challenges have resulted in many SMPs going out of business, as in recent years (in the UK), the number of firms registering for audit work has reduced and figures published by Syscap⁵ show a decline of 15.5% in the number of accountancy firms in business (Palmer and Fielding, 2014). That notwithstanding, some SMPs have been able to adapt, to face off the hostile business environment, achieving sustainable improvement in performance consequently. Arndt, Pierce, and Teece (2014) argue that a principal tenet is that a firm's performance over time is strongly tied to its ability to align its resources to the dynamic challenges of its environment and changing opportunities.

Thus, while some SMPs have been unable to weather the storm of environmental challenges, others have been able to employ their competencies – their dynamic capabilities – to adapt to such changes and improve their long-term performance. This underscored the necessity for empirical investigation, analysis, and understanding of the dynamic capabilities (DCs) that enable these firms to reinvent themselves to achieve long-term improvement in performance, and how firm performance is influenced such DCs. A thorough search of extant literature did not identify any relevant prior studies covering such investigations; hence this research set out to fill that void. This study, therefore, empirically investigates DCs as competencies employed by SMPs to achieve sustainable improvement in performance, in the market for the provision of statutory compliance and business advisory services.

The dominance of the Big 4 and mid-tier firms notwithstanding, SMPs continue to improve their performance and contribute to the economy. This study demonstrates that their improved performance is attributed to the DCs of strategic leadership,⁶ organisational learning, ambidexterity, alliances & networks, and innovativeness. In this regard, while operational (or regular) capabilities enable businesses to perform in environments with relative stability, DCs are routines and processes (patterned behaviours (Helfat et al. 2007)) which may evolve, thereby allowing businesses to adapt to rapid environmental changes (Nair et al. 2014).

Because firms operate in complex and multidimensional environments, it is unlikely that adaptability to such environmental complexity and changes be occasioned by a unique capability within the construct of DCs (Nair et al. 2014). Thus, it is likely that enterprises may require a complex set of DCs to facilitate response to environmental turbulence and its

⁵ Syscap are providers of finance solutions to SMEs in the UK.

⁶ This is also known as strategic orientation.

complexity (Nair et al. 2014). Blackburn, Carey, and Tanewski (2010) posit that to enhance the ability to provide advisory services, accountants need to acquire specialised business skills, or create a structure that facilitates easy access to such skills. Also, while an increase in the provision of business advisory services may require restructuring by certain accounting firms, development of strategic alliances with other service providers may be deemed necessary by other accounting firms (Blackburn, Carey, and Tanewski 2010). These DCs are expected to positively impact performance of the accountancy practice, thus emphasising their importance to such firms. Although such DCs do explain success at firm-level, firm survival, competitive advantage, and wealth creation (Teece 2007), their effect on corporate performance had not been empirically investigated in the context of SMPs, in context of the UK.

Furthermore, as trading conditions get tougher, accountants need to keep SME clients out of trouble, look closely at their own costs, and be proactive at engaging with clients as well as at attracting new clients (Bartram 2012). Considering that small enterprises usually contract a small accounting firm to provide SCT services due to lack of in-house expertise, there's apparent opportunity for small practice accountants to proactively partner with, and market management accounting services to such enterprises (Lucas, Prowle, and Lowth 2013).

1.2 THEORETICAL CONTEXT OF THE STUDY

This study was informed by the DCs theory of Teece, Pisano, and Shuen (1997). They contend that DCs are 'the firm's ability to integrate, build, and reconfigure internal and external capabilities to address rapidly changing environments' (p. 516). While ordinary capabilities⁷ (OCs) enable a firm to deal with its current circumstances (Zahra, Sapienza, and Davidsson 2006), DCs are concerned with change (Winter 2003), allowing for evolutionary fitness (Nair et al. 2014).

Firms need to be conceptualized as unique modes of organization, possessing distinct and often DCs in order to understand their resources, behaviour, strategies, and boundaries (Arndt, Pierce, and Teece 2014). Moreover, DCs are guided by mechanisms of knowledge acquisition and sharing, collective learning, experience accumulation and transfer, with knowledge capabilities being a firm's unique capabilities (Chirico and Nordqvist 2010). Amongst SMEs,

⁷ These are also known as operation or substantive capabilities.

external knowledge acquisition strategies are especially helpful and appear to foster innovation (Zhou and Uhlener 2009), since by virtue of the size of such organisations, including SMPs, the requisite knowledge cannot be obtained from internal sources.

As industries adjust in response to the dynamism of the business environment, firms that succeed in the marketplace often update their strategy portfolio (Tashman and Marano 2010). A knowledge-based approach to strategy formulation and implementation starts with competence of people (Sveiby 2001). Thus the key to value creation in a firm is the effective leverage of its employees' competencies (Muthusamy and Palanisamy 2004). Winter (2003) contends that high-level routines and leadership assets that determine a firm's ability to perceive and seize on new opportunities are key to DCs. Therefore, the possession of DCs is great potential in today's dynamic business environment (Ambrosini and Bowman 2009).

A primary motivation for change and attribute of DCs (Arthurs and Busenitz 2006) is the difference between the desired performance and actual performance (Whetten 1987). Thus DCs are also triggered by discrepancies between expected performance and actual performance as perceived by management (Moliterno and Wiersma 2007). The organisation that wants to build competitive advantages has to create and leverage its capabilities (Muthusamy and Palanisamy 2004). Zollo and Winter (2002) posit that 'a dynamic capability is a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness' (p. 340).

Thus, given the very competitive and dynamic business environment, and the need for rapid and flexible response to change, the DCs approach provided a coherent framework to investigate the attributes that enable SMPs to continuously improve their performance. When processes are re-engineered and new organisational processes encouraged, firm performance should be improved (Jantunen et al. 2005).

1.3 THE ACCOUNTANCY PRACTICE SECTOR - THE BUSINESS ENVIRONMENT OF SMPs

The UK accountancy market is characterized by the dominance of the Big 4 which exercise great influence, particularly at the upper end of the market (Market Line 2014). Also they audit all but one company in the FTSE 100 share index and dominate audits of FTSE 350

companies, although mid-tier firms argue that they⁸ possess the scale, experience and skills necessary to provide quality audits to many FTSE 100 companies (Huber 2011). Furthermore, over the five years to 2014, the Big 4 and the mid-tier firms experienced a steady increase in the proportion of fee income from non-audit work to non-audit clients, while the fee income from non-audit work to audit clients by the Big 4 has been falling (FRC 2014). This implies that the big accountancy firms have been expanding their client base, especially in the provision of advisory (non-audit) services. A priori, such expansion tends to increase the competitive pressure on SMPs, considering the reduction in the number of potential clients within their sphere of influence.

Globally, the accountancy market consists of revenues⁹ generated by firms engaged in designing, preparing and auditing accounting records (Market Line 2014; CIMA 2011) and from other services such as business consulting and management accounting (CIMA 2011). Although the accountancy sector is dominated by the Big 4, there is huge range of accountancy firms operating in the sector, from single office entities servicing the local business market to multinational networks catering for the diverse business needs of the large international organisations (CIMA 2011). Also, although the number of sole practitioners in the UK accountancy practice sector fell by 0.5% in 2013, they still make up more than 50% of registered accountancy firms (FRC 2014).

The huge proportion of accountancy market share and revenue controlled by the Big 4 indicates the difficulties the SMPs do have in order to compete, survive and, let alone continuously improve their performance. This brings to light the question of how SMPs have managed to survive and achieved long-term improvement in performance in such a market that is dominated by the larger accountancy firms. This research takes the view that those firms that have improved their long-term performance have been those that have been able to develop and deplore relevant DCs (e.g. Teece, Pisano, and Shuen 1997). That said, a review of extant literature did not identify relevant previous research. Therefore, this research sought to fill that gap by empirically investigating SMPs' use of DCs for sustainable performance improvement.

⁸ The mid-tier firms

⁹ These include income from tax, audit, and the provision of advisory services.

The implication of the dominance of the Big 4 and the larger non-big 4 firms, combined with the increase in the audit exemption threshold,¹⁰ is a continuous restructuring at the lower end of the accountancy practice market, with acquisitions or mergers or disappearance (liquidation) of firms, especially SMPs. Therefore, in order to extend their geographic reach and appeal to large multinational companies, mid-tier firms have engaged in mergers and acquisitions (Palmer and Fielding 2014; Ascher 2008).¹¹ By creating these networks, thereby increasing their sizes to rival the power of the Big 4, the mid-tier firms intend to create demand for their respective services (Ascher 2008). Furthermore, with the decrease in audit fee income in 2012/13 for the larger non-big 4 firms (Gerakos and Syverson 2015), it is likely that these firms as well as the Big 4 will move into the market for SMEs, a sector usually dominated by SMPs, thus rendering achievement of sustainable performance improvement even more critical for SMPs.¹²

A small firm is a business that employs 1-49 people, a medium-sized firm employs 50-249 people, and a large firm has 250 or more employees. SMEs are firms with 1-249 staff (BIS 2014). The European Union (EU) defines a small business¹³ as an enterprise having less than 50 employees, a turnover of up to 10 million Euros, and balance sheet total of up to 10 million Euros; and a medium enterprise as a business with less than 250 employees, a turnover of up to 50 million Euros, with balance sheet total of 43 million Euros (European Commission 2003). SMPs are SMEs that operate in the professional services sector in which client personal relationship management and quality of service delivery are important, with service delivery often bespoke. Thus the business environment of SMPs tends to be different from that of SMEs in other sectors although such SMEs make up the client base of SMPs.

By using their accounting skills and business acumen, accountants (SMPs) seek to understand clients' businesses (Perry and Coetzer 2009). Such in-depth knowledge and understanding enable SMPs to provide value-adding services to SME clients. SMPs provide advisory

¹⁰ In the UK, it is mandatory for any company that satisfies two of the following requirements to engage independent auditors to audit its financial statements: annual revenues exceeding £6.5m; gross assets value over £3.26m; and 51 or more employees on average (Fisher 2015; ICAEW 2015).

¹¹ For instance: the creation of Baker Tilly US - constituting 22 mid-tier accountancy practices in US (Ascher 2008), BDO merger with PKF, and Baker Tilly's acquisition of RSM Tenon (Palmer and Fielding 2014).

¹² The number of registered audit firms in the UK continues to decline with an 11.2% fall between 31 December 2009 and 31 December 2013 (with a slower rate of 3.8% fall in 2013) (FRC 2014). Increases in the audit exemption threshold in 2004 and 2008 resulting in an increase in the proportion of companies filing annual accounts at Companies House that are audit exempt, from 69.5% in 2008/09 to 72.1% in 2012/13, is reflected in the decrease in the number of registered audit firms (FRC 2014).

¹³ This includes micro enterprises.

services to SMEs principally in areas of financial management, with the SMP-SME relationship being influenced by important variables including competency, culture, trust, and communication (Blackburn, Carey, and Tanewski 2010; Gooderham et al. 2004). Thus, SMPs' supply of specialised services may be a significant success factor, with many such accounting practices focusing on specific sectors and services (Martin 2004).

Because of costs of searching for business advice, uncertainty about the benefits of available advice, scepticism of the advice that is available, and concern of the perception that seeking external advice denotes weakness (Blackburn and Hart 2002), SME owners/managers: tend not to have all relevant information about the availability of business advisory services, are often reluctant to seek advice, and make relatively little use of such external advice (Jarvis and Rigby 2011). Moreover, in order to improve the effective delivery of business advisory services, it is important to understand the trajectory of the adviser-client relationship (Dyer and Ross 2007). Therefore, SMPs that have used their DCs to understand this adviser-client trajectory, and market their services to highlight the positive impact such services may have on SME performance,¹⁴ may have been able to achieve sustainable performance enhancement.

Lack of understanding of financial management is one of the key reasons for failure in small enterprises (Nayak and Greenfield 1994; Dunn and Cheatham 1993), and although owners/managers have expertise in the product or service range their firms provide, their knowledge in management may be inadequate, and may adopt the use of basic financial management on a cash flow basis (Berry, Carbone, and Haeckel 2002). SMEs need value-adding business advisory to enable them deal with diverse business challenges including the desire to achieve significant growth and the need to withstand adverse competitive environment (Baldock, Blundel, and Fry 2013). Well-designed interventions can help to strengthen the small firm population, address specific market failures and help smaller firms compete more effectively against international rivals and larger firms (Baldock, Blundel, and Fry 2013). This suggests that business advisory services are required by a significant proportion of owners/managers of small firms, the complexity of the adviser-client relationship notwithstanding (Beresford and Saunders 2005).

Providers of business advisory services¹⁵ will seek to target potential clients and attempt to convince them of the benefits of taking up their services, particularly seeking out those

¹⁴ Growth and returns

¹⁵ Be they public or private.

potential clients who are most likely to be receptive to the idea that external advice is likely to contribute to improved business performance (Johnson, Webber, and Thomas 2007). This shows the importance for SMPs to market their services, and to underscore the expected positive impact of the services on business performance. An increased uptake of SMP services by SME clients will also increase the SMP's gross revenue. However, it could be argued that for SMPs to be able to design and develop relevant services, and identify potential clients, they must have the necessary DCs, an area that lacked coverage in the literature.

Challenging times for accounting firms require diligence, increased efforts, cooperation, understanding and sacrifice by all staff in order to retain current clients and remain competitiveness (Erickson 2010). Planning is critical for small CPA firms to adapt to economic change and achieve long-term success. Such planning include staff training to develop bottom-up resources for all functional areas of practice, prompt and necessary replacement of traditional approaches with new technology in order to improve efficiency (Perry 2010). Also, as trading conditions get tougher, accountants have a responsibility to keep SME clients out of trouble, and smaller accountancy firms need to look closely at their costs, and be proactive at engaging with clients as well as at attracting new clients (Bartram 2012).

ACCA (2013) contends that only a minority of SMPs are involved in clients' FX transactions or exposures in any way. However, considering that many SMEs need to deal in foreign currencies at some point in the life of each business, ACCA (2013) argues that SMPs, as trusted advisers could do more to support such clients. Furthermore, business support to clients is likely to be easier for practices with strong professional networks than for those relying only on internal resources, as within such networks, SMPs can capitalise on services they currently provide and convert any resulting goodwill into higher value added services (ACCA 2013).

Blackburn, Carey, and Tanewski (2010) contend that it may be necessary for accountants to be additionally trained in communication skills and business advice. Similarly, while some accounting practice firms may require restructuring to enable them augment the supply of non-SCT services, others may prefer to align strategically with other providers of business advice (Blackburn, Carey, and Tanewski 2010). Such training and restructuring would facilitate organisational learning and integration of new knowledge within the SMP.

Organisational learning and managerial cognitive processes underlie the practice of strategy formulation and implementation (Eisenhardt and Zbaracki 1992).

There is continued globalisation against a backdrop of persistent economic turbulence and uncertainty, with growing pressure to rethink the entire global economic and financial governance infrastructure (ACCA 2012). Therefore in order to enhance competence in providing business advisory services, there is the need for the accountant to acquire specialised business skills (Blackburn, Carey, and Tanewski 2010). Moreover, to survive in the long-term, small practices firms and their clients should develop skills in marketing the services they provide as well as be able to inspire trust (Maister, Green, and Galford 2000). Additionally, the need for continual cohesion with business partners is necessary for both professional providers of business advice and small enterprises (Dyer and Ross 2007).

ICAEW (2003) discussed the fall in profit margin from statutory work caused by increased regulation and accountant's incapability to discuss fee increases with clients because of not wanting to lose business. Aimed at SMPs that serve SME clients, practitioners were urged to concentrate on developing services that were value adding (ICAEW 2003). In many countries, accountants with small firm client base have been developing services beyond traditional accountancy services of regulatory reporting, and in Norway, NARF¹⁶ urged its membership to regard themselves as business advisers (Gooderham et al. 2004).

Furthermore, for the changing needs of the marketplace in the 21st century to be adequately addressed, and for profitability to be retained, it is necessary not only for small practices to rely on developing the base of recurrent work, but also to completely change focus, aiming at obtaining about 60% of revenue from advisory/consultancy services or other value adding work (ICAEW 2003). In this regard, in exploring the changing landscape for the accounting practitioner in Ireland, Doran (2006) analysed the uptake of services by clients and contend that when offered, financing advice has an uptake of 91% and business advisory has an uptake of 90%; levels of uptake that are in line with those for statutory work, but, from the clients' perspectives, only provided by 34% and 51% of accountants, respectively.

There is a significant potential for practicing accountants to expand the provision of management accounting services to smaller firms, as accountants have a role to play in

¹⁶ The Norwegian Association of Authorized Accountants - a professional association of accountants focusing on small businesses.

increasing the financial awareness of the owner-managers, to enable SMEs improve their financial performance (Marriott and Marriott 2000). As such, many small practice firms increasingly identify themselves as multidisciplinary, providing a vast range of services such as management consulting, legal services, and financial advisory (Hasle, Bager, and Granerud 2010; Greenwood, Suddaby, and Hinings 2002). For instance, in a study on the diversification of services by small accounting firms in Norway, approximately 25% of respondents provide advisory services in HRM, management and organization, indicating that services beyond the scope of statutory reporting are provided by a significant number of professional accountants (Doving and Gooderham 2008). Also, Doving et al. (2004)¹⁷ contend that, generally in Norway and Scotland, small accountancy practices regularly supply a number of advisory services, although the range of services provided varies considerably from practice to practice.

In addition to addressing the needs of SMEs, environmental sustainability and CSR¹⁸ are emergent key issues for the accountancy profession (IFAC 2012), with some SMPs offering their SME clients ad hoc and informal environmental sustainability advice relating to cost reduction opportunities in such areas including shared resource input, transportation costs and consumption of energy (Spence, Agyemang, and Rinaldi 2012). Furthermore, the accountant as a trusted business partner with useful experience in financial advice notwithstanding, s/he may not be competent on all issues affecting various areas of the business; therefore, SMPs should collaborate with local experts on environmental sustainability, to facilitate access to knowledge that is relevant and credible (Spence, Agyemang, and Rinaldi 2012).¹⁹

Although the provision of compliance service is important in the SMP-SME relationship, a number of factors related to both the nature of the accountancy practice and the SME are relevant in determining the likelihood of the development of a wider business support role (Jarvis and Rigby 2011). For instance, strategic intent, the internal development of human capital, and external alliances are clearly important in engendering diversification and determining the breadth of services provided by practice accountants (Doving and Gooderham 2008; Doving et al. 2004). Also, positioning the practice in relation to serving larger small firms has some limited effect at influencing the number of services offered (Doving et al. 2004). Thus, for accountants to increase the range of services provided, they

¹⁷ In their study to report on the variation in provision of business advice by small accounting firms

¹⁸ Corporate Social Responsibility (CSR)

¹⁹ In order for accountants to be used in an advisory capacity, they must be perceived as credible in the delivery of such services (Gooderham et al. 2004).

need to be multidisciplinary, develop their skills base, and move from being technicians in accounting to knowledge professionals (Blackburn and Jarvis 2010).

Furthermore, because client characteristics and resources account for a great proportion of the variation in the demand for value-added business advisory by SMEs, it is likely that most of the product diversification by accountancy practices (Schizas, Jarvis, and Daskalakis 2012), is demand-driven and does not result from the strategic direction or entrepreneurial orientation or a strategic choice of a distinct business model of these firms (Jarvis and Rigby 2011). Since an effective approach for SMPs is to seek to market to proactive clients, SMPs need enhanced business development capabilities, focusing more on customer segmentation and development of distinct value-added service lines than client development (Schizas, Jarvis, and Daskalakis 2012).

External accountants have increasingly diversified their service provision due to changes in the audit threshold (Jarvis and Rigby 2011; Blackburn and Jarvis 2010).²⁰ Diversification of services provided by external accountants is also due to technological development and the changing nature of competition (Jarvis and Rigby 2011). As such, the smaller accounting practices, especially, would be less profitable until they could identify a niche market that is sustainable, or cooperate with other small practices (Martin 2004).

The larger practices, as measured by the number of staff, tend to offer more services, with an additional service requiring three additional staff members²¹ on average (Doving et al. 2004). On the other hand, the in-house capabilities of SMPs to supply technical advice on a number of business operations²² is likely to be limited when compared to larger practice firms, implying that the size of the SMP may be an obstacle that prevents it from providing comprehensive services from within the firm (Blackburn and Jarvis 2010).

1.4 PREVIOUS RESEARCH ON SMPs AND DYNAMIC CAPABILITIES

A number of studies had been conducted on either the accountancy practice industry or on DCs. However, the studies differed from this research in context, scope, as well as aims and objectives. These studies include:

²⁰ Changes that resulted in an increase in the number of firms that are exempt from audit.

²¹ The assumption here is that all things being equal.

²² These include marketing, Human Resources Management (HRM), and succession planning.

Blackburn and Jarvis (2010) analysed the role of SMPs in providing business support to SMEs, and used qualitative empirical data obtained from six accountants, each from a different country (excluding the UK). While the exploratory study identified competency, trust, proximity, and responsiveness as factors that SMEs look for when procuring services from SMPs, it did not have any theoretical foundation, and could not be inferred from the study that improved performance by SMPs are occasioned by these factors.

Similarly, the variation in the use, by small businesses, of business advice provided by small accountancy firms was investigated by Gooderham et al. (2004). Although the study adopted a quantitative approach and collected empirical data using structured questionnaire, its focus was on aspects within small enterprises that enabled them to avail of non-compliance service provided by the small accountancy firms in Norway.

In their investigation of the impact of a firm's knowledge-based DCs on its innovation performance in the manufacturing industry, Zheng, Zhang, and Du (2011) focused on knowledge-based DCs and innovation in manufacturing, conceptualising network embeddedness as antecedents of knowledge capabilities. However, by empirically investigating learning capabilities as a dynamic capability, as well as other DCs that influence firm performance, the current study assumed a more comprehensive approach that considers multiple constructs and their effect on firm performance. Moreover, the need to evaluate the effect of environmental dynamism (as suggested for future research by Zheng, Zhang, and Du (2011)), gave further inspiration to conduct this study.

In the same vein, in examining sensing and responding capabilities as antecedents of business agility, and the impact of agility on firm performance in manufacturing and service firms in the US, Lee et al. (2013) employed a qualitative approach, with cross-sectional research design and collection of data through survey instrument. They focused on the role of IT infrastructure to support organisational processes and knowledge management (sensing and responding capabilities) in building business agility. The study examined how the relationship between sensing and responding capabilities and firm performance is moderated by the effect of market competition. However, the results of the study did not distinctively indicate factors that relate to service industry as opposed to those that relate to manufacturing industry. Also, the final sample from which data are obtained and analysed, and on which the outcome of the

study is based, included only one (1) accounting firm and sixteen (16) consulting firms, thus service firms making just 8.2% of the total sample (N=195) respondents.

In their study of DCs as antecedents of the extent of diversification of service provision by small accounting practices in Norway, Doving and Gooderham (2008) argue that specific findings in their study may not be readily generalised to larger accountancy firms, and noted that it is characterised by the narrow extent of core products with modest diversification that is easily noticeable and measured. In addition, they indicate that measurement of other variables in their study was easy because of standardisation of core products and relevant competencies. The current study, however, extends Doving and Gooderham (2008) in a number of ways: it looks at a broader range of DCs constructs; it poses and sought to respond to a research problem that differs from prior studies; the variables in the current study include latent (unobservable/abstract) constructs which were operationalised into observable variables prior to measurement. Furthermore, the current study is conducted in a different context – a UK setting that includes SMPs.²³

Lee, Chen, and Shyr (2011) investigated the determinants of dynamic learning in service alliance organisations, in order to enhance understanding of the development of dynamic knowledge articulation (DKA) and DCs in highly dynamic service markets. They concluded that dynamic competitive advantage is created by service alliance firms using DKA and DCs which are, in turn, driven by networks/alliances, codification, and manager integration capabilities. Although the study employed a mixed research methods in which qualitative interviews were initially held with six (6) managers and quantitative data collected by way of questionnaire, sample firms were medium to large service enterprises in Taiwan (firms employing more than 200 staff). Furthermore, the sample firms were selected using judgmental sampling.²⁴ Moreover, the types of services provided by sample firms were not indicated, in addition to the fact that small firms were excluded from the study. Goldstein et al. (2002) argue that relationship services tend to be long-term, with client problems and complex communication patterns than transaction services. They posit that concentration of research on transaction services (including hotels and restaurants) does not enhance understanding of relationship services (exemplified by professional services firms), in which the provider-client relationship is critical.

²³ That is, both small and medium-sized accountancy practice firms.

²⁴ Subjective/selective/purposive sampling

Lubatkin et al. (2006) empirically investigated the role of Top Management Team (TMT) behavioural integration as antecedents enabling SMEs to engage in the strategic combinations of exploitation and exploration. However, although the study involved SMEs, there is no indication that the firms were service firms, or more precisely accountancy practices firms.²⁵ In the context of the UK and the EU, some of the sample firms in the study would be considered large firms, considering that they had more than 250 employees. The context and setting of the current study are different from Lubatkin et al. (2006), who encouraged researchers to test for ambidextrous orientation using measures they developed in their study. Therefore, as ambidextrous orientation in the current study was measured following adaptation from Lubatkin et al. (2006), the outcome has enhanced understanding in the area. Also, as indicated earlier, the current study sought to empirically investigate the impact of a comprehensive set of dynamic capability constructs on firm long-term performance, to which a search of extant literature did not indicate any relevant prior study.

1.5 AIMS AND OBJECTIVES OF THIS RESEARCH

Despite the immense resources and earnings of the Big 4 firms and mid-tier accountancy firms, as well as the dynamic nature of the business environment, some SMPs have continued to enhance their performance, making considerable contributions to the economy. However, considering the lack of empirical study in extant literature, especially based on the DCs framework, on the factors that enable the improved performance of these firms, the current research aimed at filling that gap.

Thus the study aimed at empirically investigating SMPs' DCs as the enabler of the firm's sustainable improvement in performance. Applying the DCs framework with a detailed review of literature, the study sought to answer the following questions:

- i) Is firm performance influenced by DCs?
- ii) Is there a relationship between DCs?
- iii) Is the direct relationship between DCs and firm performance mediated by certain DCs?

²⁵ Professional services firms.

1.6 RESEARCH APPROACH

In this study, the researcher considered that SMPs have more or less similar objectives, and are independent of their employees. This independence is in the sense that a change of key personnel would not completely alter the entrepreneurial objective of the business, that is, profit seeking and wealth creation. Also, the objects of the research (SMPs) were considered external to the researcher. Furthermore, hypotheses were developed, and relevant latent variables were measured after operationalisation. Such measurement, using quantitative data, enabled the hypotheses to be tested and supported or refuted, thereby answering the research questions.

The researcher's objective ontological stance and his positivist epistemological position are highlighted in the preceding paragraph. Yet any variation in the firm's objective could result from management's interpretation of the circumstances surrounding the firm. This implies that an understanding of management's interpretation of events (e.g. degree of competition, growth orientation, location of the firm) would facilitate understanding of specific decisions taken to steer the business in a specific direction, and the consequent impact on actual performance of the firm. This required the collection and analysis of qualitative data.

Cognizance of the above, a mixed research methods approach was adopted for study, with a leading quantitative method, supported by qualitative method. While the quantitative method employed a structured survey instrument (questionnaire) in collecting primary data, with data analysed using structural equation modelling, the qualitative data was collected through semi-structured interviews that was partly informed by a brief analysis (review) of the quantitative data. The qualitative data was analysed and used to explain and support the results of the quantitative analysis. This mixed research methods approach is supported by a number of researchers (e.g. Castellan 2010; Abowitz and Toole 2011; Creswell 2009; Johnson and Onwuegbuzie, and Turner 2007; Johnson and Onwuegbuzie 2004). For instance, Abowitz and Toole (2010) posit that the inherent limitations of any singular methodological approach could best be addressed by applying a mixed methods research design which results in the use of more than one method.

The choice of a mixed research methods approach was deemed most appropriate as the data collected from the qualitative study enhanced understanding of the results of the quantitative study. This approach, therefore, provided a high level of external validity and reliability of the study's results, and is supported by Johnson and Onwuegbuzie's (2004) position that mixed methods research often provide a more workable solution and produce a superior product.

1.7 STRUCTURE OF THE THESIS

This thesis is structured as follows:

Chapter 2 contains the literature review of the underpinning theory – the dynamic capabilities theory. The literature review was performed following a thematic approach so that it is relevant to the study. The literature review formed the basis of the research questions, the development of relevant hypotheses and conceptual research model, as well as evaluation of the study's contributions.

In chapter 3, the testable hypotheses that address the research questions are developed from review of the literature. A conceptual research model that demonstrates the relationship between DCs constructs and firm performance as well as between DCs constructs is also developed. The hypotheses are designed to answer the research questions, and their testing in chapters 5, 6, and 7 determines whether they are supported or not by empirical results.

Chapter 4 discusses the research approach and specific research method and techniques employed in the study, in addition to presenting the researcher's philosophical stance, and the methodology adopted. The operationalisation of the independent and dependent variables, design of survey instrument and collection of quantitative and qualitative data are also discussed in this chapter.

In chapter 5, the empirical data is used to test the hypotheses relating to the direct relationships between DCs and firm performance, to ascertain whether the hypotheses are supported or not. Each result is discussed, with analysis of data from the qualitative interview used to support the discussion and enhance understanding of the results. Also, the position of each outcome vis-à-vis prior research is highlighted. Furthermore, the effects of the control variables on the relationship between DCs and performance are also evaluated and discussed.

Chapter 6 presents the empirical analysis and discussion of the relationships between DCs constructs. In this chapter, the hypotheses relating to these relationships are tested and the empirical results discussed. Also, in discussing each result, data from the qualitative study is used to boost understanding. In addition, the impact of control variables on the relationship between DCs are assessed, and the importance and performance of DCs constructs in terms of contribution to firm performance are analysed and explained.

The effects of mediating variables in the relationship between DCs and firm performance are assessed in chapter 7. The analysis adopts a simple mediation model approach and, for each model, determines whether the intervening variable has no mediation effect, or whether it has a partial or full mediation effect on the relationship between the independent variable (DC) and dependent variable (firm performance).

In chapter 8, the key findings of the research are discussed and a proposed growth-oriented model and non-growth oriented model are presented. Also, the contributions of the study and the study's limitations are highlighted. Finally, suggestions for future research and the conclusion of the study are presented.

CHAPTER 2: LITERATURE REVIEW

2.1 OVERVIEW OF THE THEORY OF DYNAMIC CAPABILITIES

For an enterprise to achieve greater or improved performance, it should be able to develop new processes and products, and implement new business models and organisational form (Teece 2007). Because firms are faced with relatively limited resources, they require an innovative, visionary, and proactive posture to facilitate the initiative of pursuing different opportunities in complex markets that are often full of risk and uncertainty (Knight and Causgil 2004). This requires firms to have dynamic capabilities (DCs) that would enable them build and reconfigure their resource base (Pavlou and El Sawy 2011; Teece 2007; Teece, Pisano, and Shuen 1997).

DCs are defined by Teece, Pisano, and Shuen (1997: 515) as ‘the capacity to renew competencies so as to achieve congruence with the changing business environment’ by ‘adapting, integrating, and reconfiguring internal and external organizational skills, resources, and functional competencies to match the requirements of a changing environment.’ Helfat et al. (2007: 1) define a DC as ‘the capacity of an organization to purposefully create, extend or modify its resource base.’ To Zollo and Winter (2002: 340), ‘a dynamic capability is a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness.’ ‘A firm’s behavioural orientation constantly to integrate, reconfigure, renew and recreate its resources and capabilities and, most importantly, upgrade and reconstruct its core capabilities in response to the changing environment to attain and sustain competitive advantage’ (Wang and Ahmed 2007: 35).

Other researchers have defined dynamic capabilities differently, although such definitions are mainly adaptation of that by Teece, Pisano, and Shuen (1997). These include the definition of DCs as:

- ‘The firm’s processes that use resources – specifically the processes to integrate, reconfigure, gain and release resources – to match or even create market change. Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve and die’ (Eisenhardt and Martin 2000: 1107).
- ‘Those that operate to extend, modify or create ordinary capabilities’ (Winter 2003: 991).

- ‘The abilities to reconfigure a firm’s resources and routines in the manner envisioned and deemed appropriate by its principal decision-maker(s)’ (Zahra, Sapienza, and Davidsson 2006: 918).

Therefore, DCs are specific organisational processes or routines that are path dependent (Winter 2003; Zollo and Winter 2002; Eisenhardt and Martin 2000) or organisational processes, generally (Ambrosini and Bowman 2009; Helfat et al. 2007) embedded over time within the business and are deployed in the reconfiguration or renewal of the organisation’s resource base into new competencies, in line with environmental evolution (Ambrosini and Bowman 2009; Sirmon and Hitt 2003; Eisenhardt and Martin 2000). Such reconfiguration may involve the acquisition and integration of new external resources (from outside the firm’s boundaries) with the existing resources of the firm. Furthermore, DCs are developed and not bought in the market (Makadok 2001).

DCs are not ad hoc problem solving events or spontaneous reactions (Schreyogg and Kliesch-Eberl 2007; Helfat et al. 2007; Winter 2003), but are patterned (repeatable) (Ambrosini and Bowman 2009), persistent (Zollo and Winter 2002), and deliberately implemented (Helfat et al. 2007; Zahra, Sapienza, and Davidsson 2006). This implies that ‘an organization that adapts in a creative but disjointed way to a succession of crises is not exercising a dynamic capability’ (Zollo and Winter 2002: 340). While DCs deal with strategic change or resource creation or renewal, they are equally about the deliberate alteration of the organisation’s resource base. However, all such changes cannot be attributed to DCs alone (Ambrosini and Bowman 2009), since they could occur by way of new processes deployed unintentionally by management (Mintzberg and McHugh 1985), or could be the outcome of unplanned intervention (Winter 2003) or may just have been occasioned by luck (Barney 1991). This underscores the point that changes resulting from managerial actions that are not planned and deliberate cannot be attributed to a firm’s DCs.

To build competitive advantage, a firm has to create and leverage its capabilities (Muthusamy and Palanisamy 2004), by sensing, seizing, and reconfiguring its resource base (Teece, Pisano, and Shuen 1997). Thus, in highly competitive markets, especially, sensing opportunities and threats involves scanning, searching, and exploration, which require senior management’s long-term commitment to organisational objectives²⁶ (O’Reilly and Tushman 2008). These include devoting a set of resources and routines to track changes in technology,

²⁶ These include exploration.

competitive intelligence, and new opportunities (e.g. Burgelman 2002; Rotemberg and Saloner 2000; Edmondson 1999).

DCs are of different types, used for different purposes including – resources integration, or resources reconfiguration, or creation of new resources, or shedding of resources (Ambrosini and Bowman 2009). The four key processes that make up DCs are: reconfiguration - the recombination and transformation of resources and assets; leveraging the replication of process(es) or system(s) operating in one business unit into another, or extending a resource by deploying it into a new domain; learning and; creative integration (Bowman and Ambrosini 2003).

DCs should not be regarded as universally and equally applicable solution (Schilke 2014a). A firm's capabilities need to be understood mainly in terms of organisational structures and managerial processes which support productive activity (Teece, Pisano, and Shuen 1997; Teece and Pisano 1994). Similarly, an organisation's development of firm-specific capabilities and renewal of its competencies in response to shifts in the business environment are intimately tied to its business processes, market positions, and expansion paths (Teece and Pisano 1994).

The deployment and performance of DCs are moderated by a number of internal variables (paths and positions) that include managerial behaviours and perceptions, as well as the presence of complementary assets and resources (Ambrosini and Bowman 2009). Also, the external environment has a moderating effect, especially on the associations between competitive advantage and deployment of DCs (Ambrosini and Bowman 2009). Thus the heterogeneity in DCs is a major basis for their contribution to business performance (Teece, Pisano, and Shuen 1997). Environmental dynamism and the degree of heterogeneity of capabilities limit the contributions of ordinary capabilities but positively impact on the contributions of DCs relative to firm performance (Drnevich and Kriauciunus 2011). As environmental dynamism moderates the correlation between DCs and competitive advantage, DCs are not equally applicable to all firms and their effects on performance range from non-significant in very stable and very dynamic markets, to strongly positive in moderately dynamic environments (Schilke 2014a).

As the degree of environmental changes²⁷ influence the period during which a firm could maintain competitive advantage (Wiggins and Ruefli 2005), in highly dynamic environments, competitive advantage may not be long-term (Ambrosini and Bowman 2009). Therefore, although there could be more complexity in the interaction among DCs, environmental turbulence, and competitive advantage than in a simple linear relationship (Schilke 2014a), by effectively implementing DCs in response to environmental changes, a firm can build on successive temporal advantages (Duh 2013; Eisenhardt and Martin 2000), that would result in sustained competitive advantage (Barreto 2010; Teece 2007).

Firms need improved or incremental performance for increased returns and survivability. Firms also need sustained competitive advantage, long-term profitability and shareholder wealth creation, in order to attract more inward investment from investors, and to stay in business in the long-term. Development of DCs is aimed at enabling a firm to gain strategic advantage (Zahra, Sapienza, and Davidsson 2006), and to assist it in achieving its corporate objectives, thereby rewarding entrepreneurship and other stakeholders.

2.2 DYNAMIC CAPABILITIES AND FIRM PERFORMANCE

A firm's relative superior performance is an empirical indicator of its competitive advantage (Schilke 2014a; Peteraf and Barney 2003) and possible competition in same industry (Peteraf and Barney 2003). DCs are an enterprise's ability to renew its stock of valuable resources in a dynamic environment, so as to attain competitive advantage and improved long-term performance (Cao 2011; Ambrosini and Bowman 2009). In broad terms, a resource includes activities and capabilities which enable firms to generate rents (Ambrosini and Bowman 2009; Helfat et al. 2007; Barney 1991); DCs govern the rate of change of such resources (Winter 2003).

As firms operate in complex and multidimensional environments with non-linear performance implications of DCs, a complex set of DCs may be required for an effective response to the complexity of environmental changes, since a single capability may not enable adequate responsiveness or adaptation (Nair et al. 2014). For instance, as the competitive advantage of an international retailer is more susceptible to the environment of the host country, possession of relevant DCs is important for such retailers to change and adjust to that environment in

²⁷ These include globalisation.

order to survive and succeed in the local economy (Cao 2011). Woldesenbet, Ram, and Jones (2011) demonstrate that it is difficult for small firms to achieve organisational performance without application of different but hierarchically related DCs including bridging, networking, resource integration and strategic service delivery.

Where DCs enable an organisation to adapt to environmental changes, the degree of heterogeneity of the capability is not a critical attribute for survival or competitive parity with other firms, but would be relevant for superior relative firm performance (Drnevich and Kriauciunas 2011). An organisation's competitive heterogeneity is founded on its possession of distinctive capabilities or exclusive knowledge (Eisenhardt and Martin 2000), which cannot be obtained from the factor market (Dierickx and Cool 1989; Teece 1980) but rather must be produced over time, through organizational routines or structure (Makadok 2001). DCs that originate from organizational learning and knowledge articulation routine can enable a firm to obtain competitive advantage (Winter 2003; Zollo and Winter 2002) and sustainable improvement in performance.

As DCs are equifinal but idiosyncratic,²⁸ such capabilities, per se, can be a source of competitive advantage but not sustainable competitive advantage, since copying or imitation is irrelevant, considering they can be independently discovered by managers of other firms, on their own (Eisenhardt and Martin 2000). Firms with greater breadth and depth of organisational learning (OL), and valuable, imperfectly imitable and rare organisational innovation (OI), achieve greater firm performance (Hurley and Hult 1998), as OL and OI are DCs. Furthermore, faster (quick) learning organizations gain greater strategic capability, with resultant sustainable competitive advantage and improved long-term performance (Senge 1990).

To maintain DCs is expensive, and involve long-term commitment to specialised resources (Winter 2003; Zollo and Winter 2002). This includes significant operational, cognitive and managerial costs, with their deployment²⁹ requiring a significant amount of managerial input in terms of time and energy (Pablo et al. 2007; Lavie 2006). Also, as DCs are aimed at the reconfiguration of the organisation's resource base,³⁰ with valuation of the impact of such resource reconfiguration only possible ex-post, they are exposed to short-term cost cutting pressures (Ambrosini and Bowman 2009). Thus, financial constraints may impact on the

²⁸ They are different in terms of many details

²⁹ Deployment of dynamic capabilities

³⁰ This implies the creation of future resources

deployment of DCs and on corporate performance subsequently. Similarly, in the accountancy practice sector, resource constraints leave many SMPs particularly vulnerable to environmental changes, where such changes require the leveraging of assets to achieve improved operational and financial performance.

Moreover, if managers misconceive the organisation's competitive environment, costs may be incurred for triggering and deploying inappropriate DCs which do not maintain or improve the firm's performance (Zahra, Sapienza, and Davidsson 2006). As such, while development of DCs is aimed at obtaining strategic advantage, organisational success is not guaranteed by their development per se (Zahra, Sapienza, and Davidsson 2006). Hence, senior management should understand the triggers for usage of DCs (Ambrosini and Bowman 2009). Such triggers would include accurate interpretation of information from environmental scanning, determination of appropriate DCs to be deployed and accurate timing of their implementation.

Therefore, considering that substantial costs may be incurred in developing DCs, such capabilities may negatively impact on a firm's performance if significant resources are devoted to their development in periods when little change is required. Thus, as strategic options (Kogut and Zander 1996) that enable organisations to reconfigure their current level of resources in line with emergent need or opportunity, it is important to balance the costs of deploying DCs with the benefits of their actual use (Schilke 2014a). The implication is that firms should frequently use their DCs, such that substantial value could be generated by the capabilities (Helfat and Winter 2011). Strong DCs, especially those pertaining to entrepreneurial competencies, are of importance to market creating (and co-creating) processes, and are critical success factors, particularly when an innovating firm needs to pioneer a market, or a new product category (Teece 2012). Therefore, relative superior performance could be achieved by the deployment of a firm's meta-capabilities - 'the capability that wins tomorrow is the capability to develop the capability to develop the capability that innovates faster (or better), and so on' (Collis 1994: 148).

Where knowledge and organisational capabilities are developed and leveraged, as in an innovative firm culture, the main determinants of organisational capabilities and performance are the firm specific resources (Teece and Pisano 1994; Barney 1991; Grant 1991). Firm specific resources would include its dynamic capabilities – processes and routines that are deployed to scan its internal and external environment, resulting in the alignment or

reconfiguration of its resource base vis-à-vis environmental changes, and its eventual repositioning in the market, as well as sustainable enhancement in its performance.

The speed with, and degree to, which a firm's specific resources can be configured and reconfigured in line with the competitive landscape, to enable it to earn sustained positive abnormal returns are determined by its dynamic capabilities (Teece 2012). Firms develop hierarchies, rules and procedures as they become successful and mature; and in stable environments, innovation could be hindered if standard procedures, established capabilities, and complementary assets are not constantly reviewed, revised and updated, for competitive advantage and superior performance to be sustained (Duh 2013).

Where success reinforces existing routines and leads to more exploitation of current competencies and less exploration of new competencies (Sitkin et al. 2011; Lant, Milliken and Batra 1992), firms fall into a success trap (Levinthal and March 1993) or a competence trap (Leonard-Barton 1992). To overcome success traps, especially in high-tech industries operating in dynamic environments, the development and implementation of DCs is of utmost importance (Wang, Senaratne, and Rafiq 2015). DCs govern other organizational activities and enable a firm to generate superior profits through the development and production of differentiated products and services that address new and existing markets with robust demand (Teece 2014). Therefore, DCs significantly transform resources into improved performance (Lin and Wu 2014; Wu 2006) by converting current resources into advantage without which such resources could not be translated into performance (Zott 2003; Zollo and Winter 2002).

A primary motivation for change and attribute of DCs (Arthurs and Busenitz 2006) is the difference between the desired performance and actual performance (Whetten 1987). Thus DCs are also triggered by discrepancies between expected performance and actual performance as perceived by management (Moliterno and Wiersema 2007). Managerial dispositions in respect of the use of DCs are affected by the managers' perceptions as shaped by their past experience (Ambrosini and Bowman 2009). The actual environment and managers' perception are important in knowing whether and how DCs are employed, since misinterpretation of the state of environmental dynamism will negatively influence management's choice in using DCs (Ambrosini and Bowman 2009).

Institutionalization (the process of ensuring that effective organizational routines are

established) is fostered by specialized organizational structures (Crossan, Lane, and White 1999) which help ensure that procedures producing favourable outcomes are identified and continue to be executed (Schilke and Goerzen 2010). Organizational structures, such as coordination committees, speed problem-solving processes and improve the quality of solutions (Clark and Fujimoto 1990). Firms that invest in structures focusing explicitly on improving its competencies will significantly outperform competitors that do not do so (Henderson and Cockburn 1994).

The knowledge, skills, and abilities embodied in people, referred to as human capital (Coff 2002), including the experiences, education, and training of managers, are deemed to be fundamental in driving corporate strategy and performance (Hambrick and Mason 1984). This is because a firm's human capital enables decisions that are consistent with its specific circumstances, unique strategy, and competitive environment (Kor and Mahoney 2005). For instance, firm performance is influenced by investments in training aimed at developing human capital (Combs et al. 2006); and as the degree (content and specific objectives) of such training differs amongst organisations, so is its impact on performance.

Management's efforts to develop and maintain network contacts, aimed at generating valuable information, must be matched with requisite internal capabilities to profitably exploit such knowledge and information (Zaheer and Bell 2005). Such internal capabilities consist of adequate human and physical capital including technology. Because there is a much stronger effect on performance when human capital is present across multiple levels of hierarchy within the firm, managers should focus on cultivating human capital across various hierarchical levels within the organisation, in order to seize valuable opportunities for improving performance (Crook et al. 2011).

Because human capital is unevenly distributed among organisations (due to often short supply of superior managers and staff), it is a source of corporate value as it is difficult and not cost-effective for rival organisations to assess, copy, and/or acquire human capital (Coff 2002). Thus, because firms are significantly different in developing resources and DCs, firm-level economic performance also differs amongst organisations (Helfat 1994).

Because multinational organisations specifically face very dynamic environments characterised by strong competition, fast technological change, and less developed markets for exchange or acquisition of know-how, DCs are very relevant to the performance of these

firms (Teece 2007). Investing in DCs may positively impact a firm's profitability and its endeavours to achieve a better global presence may be enhanced (Protogerou, Caloghirou, and Lioukas 2012). A firm that successfully builds strong DCs is able to challenge competitors that are content with their current level, are not aware of changing customer demands, prioritises efficiency over innovation, and fails to empower entrepreneurial and change agents (Teece 2014).

Although resource investment (a firm's acquisition and development of its resources) and resource deployment (the utilisation of such resources in specific markets) are essential to corporate success, striking an equitable balance between the two is important for firm performance (Sirmon, Gove, and Hitt 2008). An inappropriate balance between resource investment and resource deployment negatively impacts firm performance (Sirmon and Hitt 2009). For instance, to tailor services to the needs of clients often requires substantial exchange of information between the service provider and client, as well as supporting technology and more knowledgeable staff (Sirmon and Hitt 2009).

Effective means to engage or confront competitors include doing things differently, setting ambitious targets, and redefining products and services (Porter 1987). Considering the increasing need for firms to combine multiple sources of invention, innovation and manufacturing to deliver marketplace value, and that business operations are usually geographically and organizationally distributed, the importance of DCs has become more pronounced in large sectors of the global economy, especially in high-tech industry (Teece 2007). DCs are primarily recursive as they combine knowledge about the firm's current performance against its desired level of performance in the product market with the search for new strategic inputs and reconfigurations that would permit the firm to meet its expected performance (Arthurs and Busenitz 2006). Superior market performance may result from a firm's competencies in the latest product technologies and the development of advanced production processes (Porter 1980).

Absorptive capability and transformative capability are two important DCs that should be developed in order for managers to achieve differential performance. Although firms competing within the same sectors have commonalities in their absorptive and transformative capabilities, firm-specific factors (such as resources) and internal processes necessary for their development render these capabilities different across firms (Jantunen, Ellonen, and

Johansson 2012), with consequent differential in firm performance (Wang, Senaratne, and Rafiq 2015).

The ability of enterprises to manage existing competencies based on prior success while continuously renewing themselves in the face of environmental dynamism is relevant to superior firm performance. Firms that are better at developing and applying DCs do possess stronger absorptive and transformative capabilities, and are able to avoid success traps (Wang, Senaratne, and Rafiq 2015). Firm performance should be improved when processes are re-engineered and new organisational practices encouraged (Jantunen et al. 2005). In highly competitive markets, firms would be better prepared for survival by responding to competitive challenges via opportunity identification activities since the outcomes of a firm's actions will depend on those pursued by competitors in such markets (Wilden et al. 2013).

DCs are conducive to long-term firm performance (Wang and Ahmed 2007). Dynamic integration capability contributes to performance enhancement (Lin and Wu 2014). Resource exchange and integration know-how can be achieved through successful alliance activities of firms, with consequent improvement in their performance (Porrini 2004). Innovativeness is a capability that is critical to a firm's performance (Zaheer and Bell 2005). Product-innovation performance positively impacts on the relative growth of the firm (Makkonen et al. 2014). As successful innovation results in improved performance and enables the firm to keep up with consumer demands, the firm's market share increases at the expense of competitors (Makkonen et al. 2014). In this regard, the evolutionary theory of the firm argues that the main driver of performance is innovation (Nelson and Winter 1982).

The embeddedness of firms in external networks with other organizations has significant implications for firm performance (Gulati, Nohria, and Zaheer 2000), as such networks enable access to resources which otherwise would not have been accessible. Firm performance is impacted by resource investment decisions while the return on those investments is influenced by deployment decisions (Sirmon and Hitt 2009).

Strong DCs alone are not likely to result in competitive advantage, since unique or difficult-to-replicate and unique resources, and good strategy are also necessary (Teece 2014). Therefore, the speed and extent to which the enterprise's idiosyncratic resources can be aligned and realigned with the enterprise's strategy are determined by the strength of the firm's DCs (Teece 2014). Thus DCs underscore the development of management

competencies and difficult-to-imitate combinations of organizational, functional, and technological skills aimed at changing the current operational mechanisms so as to satisfy new customer demands and to improve performance (Helfat and Peteraf 2003).

In highly competitive environments, the recombination of existing resources or acquisition of new resources, and the development of new capabilities to seize on market opportunities are likely to be most valuable (Makadok 2001). Higher-order DCs entail organisational change aimed at achieving congruence with the environment (Fainshmidt et al. 2016). The reconfiguration of the resource base to differentiate through innovation may enable a firm to capture new customers as it gains first mover advantages, with such ability to sense market trends and seize opportunities prior to competitors resulting in a premium on the firm (Wilden et al. 2013). While DCs may influence certain categories of firm performance, their fit to the internal organisational structure and the external environment determines their potential for a consequent superior performance (Wilden et al. 2013).

Firms are expected to have greater success in international activities if they actively implement new strategies, methods and processes that align their internal organisation with the demands of the international business environment (Jantunen et al. 2005). For firms to grow and enhance their expansion process, it is important that they develop value-adding capabilities (Prange and Verdier 2011). Advanced reconfiguring capabilities that results in new resource combinations, better-organised processes and structures should enable firms to seize opportunities, with consequent improvement in their performance (Jantunen et al. 2005).

2.3 DYNAMIC CAPABILITIES AND COMPETITIVE ADVANTAGE

For a firm to survive in the current global, complex, and rapidly changing environment, it needs to be entrepreneurial, take risks, and be innovative in ideas, products, processes, and services (Fairoz, Hirobumi, and Tanak 2010; Huang and Wang 2011). With such persistent and rapid changes in the market (Prajogo and Ahmed 2006), competitive advantage may be attained by pursuing marketing and entrepreneurial activities (Chapman and Hyland 2004).

Learning orientation facilitates innovation efficiency - the basis for attaining competitive advantage (Lopez, Peon, and Ordas 2005), and is fundamental in achieving strategic organisational renewal in an organization (Crossan and Berdrow 2003). Entrepreneurial

orientation (EO) refers to the organisational strategy making processes that underpin entrepreneurial decisions (Lumpkin and Dess 1996), aimed at sustaining corporate vision and creating competitive advantage (Rauch et al. 2009).

Considering that long-term competitive advantage results from resource orchestrations by managers using DCs, effective DCs are necessary but not sufficient in themselves for competitive advantage (Eisenhardt and Martin 2000). Therefore, senior management's timing of the deployment of these capabilities is important. DCs and innovation give organisations competitive advantage and improve their evolutionary fitness through sustainable renewal that positively affects the organization's innovative performance, rather than simply because of DCs in themselves (Makkonen et al. 2014).

DCs include standard entrepreneurial activities such as identifying unmet needs and mobilizing resources in order to profit from meeting those needs (Teece 2014). The actual value of DCs, as such, rests in their potential for enabling the firm repeatedly do this, thereby facilitating the creation of long-term competitive advantage (Teece 2014). Moreover, as increasing globalisation and environmental changes (Hoskisson et al. 1999) influence the average period during which competitive advantage can be sustained (Wiggins and Ruefli 2005), with competitive advantage maintained only for a limited period of time in hypercompetitive environments (Ambrosini and Bowman 2009), sustained competitive advantage is increasingly underpinned not by a single advantage, but by a sequence of advantages achieved over time (Barreto 2010). The implication is that since environmental dynamism is crucial in the correlation between DCs and competitive advantage (Schilke 2014a), enterprises should be dynamic such that, by effectively responding to rapid environmental changes, they can build successive temporary advantages (Duh 2013).

Having reviewed the literature on the association between DCs and relative firm performance, it is important to distinguish between a firm's ordinary capabilities³¹ (OCs) and its DCs. This is because their contributions to an enterprise's performance are different.

³¹ These are also known as substantive or operational capabilities.

2.4 ORDINARY CAPABILITY Vs DYNAMIC CAPABILITY

For improved performance to be sustained, an organisation needs to continuously adapt and evolve its capabilities, to allow it respond to turbulence in its competitive environment (Newey and Zahra 2009). Capabilities involve the coordination of various organizational actors and activities, with the objective to achieve a specific objective (Zahra, Sapienza, and Davidsson 2006; Helfat and Peteraf 2003). An organisation's capabilities can be grouped into two distinct categories – DCs that allow the firm to adapt, rejuvenate, and reposition itself in the face of change; and OCs that allow the business to function, to maintain its status quo. This distinction is imperative (Pavlou and El Sawy 2011; Zahra, Sapienza, and Davidsson 2006; Zollo and Winter 2002) in that a firm's decision makers³² should be in a position to identify the capabilities, by their relevance and contributions.³³ It would also enable a cost-benefit analysis of capabilities deployment so that scarce resources are not wasted and abnormal costs incurred.

OCs are 'zero-order' capabilities that focus on operational activities and existing performance of the firm (Winter 2003: 992), can be measured against the requirements of specific tasks,³⁴ and can thus be benchmarked internally or externally to industry best operational practices (Teece 2014). On the other hand, DCs are 'higher-order' capabilities that are intentionally deployed for the reconfiguration of OCs, thereby responding to changes in market environment (Zollo and Winter 2002). For instance, product and/or service development is a key operating capability within firms, while a firm's DCs reconfigure its production process (Newey and Zahra 2009; Winter 2003), its product and the scale and markets served (winter 2003). Thus, for a capability to qualify as a dynamic capability, it must change the resource base, be embedded in the organisation, and be repeatable (Helfat and Peteraf 2003) – attributes that are critical in the DCs discourse (Ambrosini, Bowman, and Collier 2009).

Capabilities are high level routines or 'collection of routines' (Winter 2003: 991), and could be static or dynamic,³⁵ and indicate the effectiveness with which routines are performed (Nelson and Winter 1982). Static routines enable certain previously performed tasks to be

³² That is its senior management.

³³ That is whether such capabilities are geared towards sustainable improvement in performance or to maintaining the current performance of the firm.

³⁴ These include labour productivity, inventory turnover, and time to completion of a task.

³⁵ Arndt, Pierce, and Teece (2014: 12) contend that routines (static and dynamic) 'are patterns of interactions representing solutions to particular problems resident in group behaviour, and can only be partially codified, due to their inherently tacit dimension.'

replicated with improvements, while dynamic routines search for novelty in product, process, and business model innovations (Arndt, Pierce, and Teece 2014). Because dynamic routines are significantly influenced by the R&D undertaken by a firm, their replication or imitation is difficult (Arndt, Pierce, and Teece 2014).

Even though both DCs and OCs are collections of routines, DCs illustrate the capability to reconfigure and change, whereas OCs describe the capability to ‘make a daily living’ (Winter 2003: 991). Also, because DCs are strategic and distinct from OCs, by implementing DCs over OCs, competitive advantage can be maintained and extended by firms (Teece 2012). OCs and DCs are the two important classes of capabilities, are distinct from an organization’s intentions, motivations, or strategy and could be harnessed in the face of circumstances or challenges, to deliver expected results (Teece 2014). While OCs require good administration and management, and are relevant for current enterprise performance, they do not have the long-term impact of the (leadership-dependent) change management that is an important attribute/component of strong DCs (Teece 2014).

In RBV,³⁶ capabilities are a kind of resource (Barney 1991) or resources in the general sense (Ambrosini and Bowman 2009), and are also processes for utilising such resources (Amit and Shoemaker 1993). While a firm’s valuable resource base allows an organisation to earn a living in the present (Winter 2003), its DCs are processes that change and renew the resource base (Ambrosini and Bowman 2009). OCs are the firm’s ability to conduct its daily operations while DCs facilitate the extension, modification, and reconfiguration of an organisation’s OCs, in line with changes in its business environment (Pavlou and El Sawy 2011).

By reconfiguring OCs so that they remain relevant to the changing environment, DCs control the changes over OCs (Collis 1994). In the context of ambidextrous firms (O’Reilly and Tushman 2008; March 1991), DCs would aim at exploring new opportunities, while OCs would be geared at efficiently exploiting current resources. In the accountancy practice sector, SMPs would use their OCs to strengthen competencies in delivering current services, while DCs will be valuable in determining and delivering new services that address the needs of clients and potential clients.

³⁶ Resource Based View.

According to Winter (2003), the three hierarchical levels of capability are: operating capabilities or zero-level capabilities which enable businesses to perform in the short-term (the resource base); first-order capabilities that enable/facilitate changes in zero-order capabilities; and higher-order capabilities that are the result of organizational learning, leading to the creation or modification of an organisation's DCs. Winter (2003) and Collis (1994) identified a third level (third-order) DCs which change the firm's DCs; with enablers or inhibitors, as additional constructs, that affect the successful use of DCs (Ambrosini and Bowman 2009).

Furthermore, OCs allow firms to achieve competitive advantage in relatively stable environments, while DCs consist of routines and processes that allow firms to adapt to rapidly changing environments (Nair et al. 2014). Schilke (2014b) use empirical evidence to highlight the role of learning-to-learn routines as an important type of second-order DCs, and show that second-order DCs impact performance mainly through their effect on first-order DCs, with first- and second-order DCs acting as substitutes in affecting performance.

DCs support evolutionary fitness, which is linked to continuous innovation as the business environment shifts while OCs support technical fitness (Teece 2009). In New Product Development (NPD), for example, execution of the daily operations required to develop a product would be the role of ordinary capabilities, while selection of the product in line with environmental change would be the role of DCs (Pavlou and El Sawy 2011). The performance of administrative, operational, and governance-related functions that are (technically) necessary to accomplish tasks are OCs, while the higher-level functions that can enable a firm to direct its ordinary activities toward high-rewarding undertakings are DCs (Teece 2014). To manage the enterprise's resources to address and shape a very dynamic business environment requires DCs (Teece 2014).

2.5 NATURE AND DEVELOPMENT OF DYNAMIC CAPABILITIES

2.5.1 Nature of Dynamic Capabilities

As skills, routines and processes needed for exploitation are significantly different from those necessary for exploration, possession of such ambidextrous capabilities (O'Reilly and Tushman 2008) by senior management is a key differentiating factor between firms that do

survive as the environment changes against those that fail to (Lubatkin et al. 2006; Rivkin and Siggelkow 2003). The firm's processes, organisational and strategic routines by which it continually adapts its resources, to achieve new configurations, adjust to environmental dynamism, gain competitive advantage (Tashman and Marano 2010; Eisenhardt and Martin 2000) and achieve sustainable performance improvement, are its DCs. In such marketplaces, firms that succeed often update their strategy portfolio (Tashman and Marano 2010).

Service routines are managerial practices that shape the firm's capabilities development and empower it to effectively respond to external environmental dynamism (Kenney and Gudergan 2006). Such senior management practices – the firm's dynamic managerial capabilities - could be split and analysed into the various components - sensing, seizing, and reconfiguring - with necessary cognitive support (Helfat and Peteraf 2015). This is in line with the fact that senior managerial cognition is a contributory factor to the micro-foundations of an organisation's DCs, that is, the sensing, seizing, and reconfiguration capabilities (Teece 2007).

Routines are distinguished between ostensive and performative aspects - the ostensive aspect is the structure or abstract understanding of the routine, while the performative aspect is the actual performance of the routine (Feldman and Pentland 2003). DCs, being repeated performances, are liken to high-level organizational routines (Zott 2003; Collis 1994). While the ostensive routine may be quite identical across competing businesses, the performative or practical aspect of the routine is expected to exhibit subtle but important variation between organisations (Ambrosini and Bowman 2009). Furthermore, because even in instances where the performative capability is similar across enterprises, with most likely differentiation in the complementary and supporting assets and processes of such firms, there would be variable impact from the common capability (Ambrosini and Bowman 2009).

The search abilities of firms, by which they identify opportunities and threats, or understand competitive developments, technological opportunities and evolving client requirements are essential elements in DCs (Teece 2007; Augier and Teece 2007). Although these abilities are important, they are, per se, not DCs (Ambrosini and Bowman 2009), but rather are the micro-foundations of DCs (Teece 2007). They are also the organizational and managerial processes that support and allow DCs to be effectively utilised (Helfat et al. 2007). Thus, the acquisition

and release of resources,³⁷ as well as the use of alliance and acquisition routines to acquire new external resources for the enterprise, are related to DCs (e.g. Capron, Dussauge, and Mitchell 1998; Lane and Lubatkin 1998; Powell, Koput, and Smith-Doerr 1996).

Processes which directly function to reshape and refresh an organisation's resources, enabling competitive advantage to be sustained in changing environments, are DCs of the firm (Ambrosini and Bowman 2009). Also, transfer processes including routines for replication and brokering (e.g., Hansen 1999; Hargadon and Sutton 1997; Szulanski 1996) are DCs used by management for resource reconfiguration, particularly knowledge-based resources, within the organisation (Eisenhardt and Martin 2000).

The heterogeneity of a firm's capability is an attribute that shows its difference from capabilities in other organisations (Drnevich and Kriauciunas 2011). Heterogeneity of capabilities is important since it serves as a major source of sustained advantage in that while they allow an enterprise to create value for customers and capture some of that value, such capabilities cannot be substituted, obtained or imitated by competitors (Barney 2001; Teece, Pisano, and Shuen 1997; Peteraf 1993; Wernerfelt 1984).

A firm's capabilities are what it could accomplish, rather than what it is presently producing, and are delivered in part from learning, from firm's resources, and from organisational histories (Teece 2014). The fundamental concept in the DC framework is the capability of the firm - a set of current or potential activities utilized by the enterprise's productive resources to make and/or deliver products and services (Teece 2014). The DC framework is most relevant in the growing number of environments characterized by dynamic competition (Teece 2014).

Although change is to a limited extent in moderately dynamic markets, firms still have to adapt or continuously improve the existing operational capabilities in order that their value is maintained (Protogerou, Caloghirou, and Lioukas 2012). For instance, after venture capital backed firms go public (i.e. post IPO), DCs become even more important than entrepreneurial capabilities, considering the increased visibility and competitor contact that come about with public listing (Arthurs and Busenitz 2006). Potential transformation is envisioned when an enterprise has strong DCs that enable a strategic fit or adaptation that embraces (Teece 2014)

³⁷ These include the development of novel thinking within the firm by managers using knowledge creation routines.

the firm's internal processes, partners, customers, and the business environment (Teece 2007; Sirmon, Hitt, and Ireland 2007).

A firm will not succeed forever in a particular market, however, for it to successfully ride the waves of change across lines of business, it requires strong DCs to enable it to renew and leverage the fungible services of their valuable and difficult-to-imitate resources (Teece 2014). Thus DCs are higher-order organizational capabilities for changing current and/or creating new organizational resources and capabilities, and are underpinned by firms' ability to pursue deliberate learning aimed at changing the status quo and at learning to learn (Wang, Senaratne, and Rafiq 2015). Learning through repetition and review allows the firm's operations to become more effective and efficient (Lin and Wu 2014). In developing new products, learning capabilities enable the firm to: (i) use past experiences to avoid repetition of mistakes and; (ii) explore new knowledge (Lubatkin et al. 2006).

In attempting to conceptualize the commonalities of DCs, DCs were disaggregated into three elements - resource integration capabilities, resource reconfiguration capabilities, and resource gaining and releasing capabilities (Eisenhardt and Martin 2000), and into three categories - sensing and shaping opportunities and threats, seizing opportunities, and maintaining competitiveness through enhancing, combining, protecting and reconfiguring/transforming organizational resources (Teece 2007). DCs are about doing the right things, at the right time, based on new product (and/or process) development, unique managerial reconfiguration processes, a strong and change oriented organizational culture, and a prescient assessment of the business environment and technological opportunities (Teece 2014).

Reconfiguration is actually a heterogeneous concept, consisting of sensing (routines involve scanning, searching, and exploring new opportunities) and transformation (routines aimed to revamp the existing business logic to effectuate necessary adjustments) (Schilke and Goerzen 2010). The capabilities of reconfiguration, leveraging, and learning are regenerative capabilities, and enable modification and development, thus allowing the enterprise to influence its renewing capabilities (Makkonen et al. 2014). The capabilities of knowledge creation, sensing and seizing, and integration are renewing capabilities, and allow the enterprise to create and modify changes in its current operational-capability and resource base (Makkonen et al. 2014).

Two components of DCs - absorptive capability,³⁸ and transformative capabilities – a firm's ability to constantly redefine a portfolio of product or service opportunities based on knowledge endogenous to the firm were suggested by Pandza and Holt (2007); and three categories of DCs - absorptive, adaptive and innovative capabilities – were proposed by Wang and Ahmed (2007). Makkonen et al. (2014) conducted three qualitative case analyses to demonstrate that, generally, for individual firms facing different contextual events and forming collective interpretations of them, the application of various types of DCs entails quite complex, rich, and diverse actions.

Absorptive and transformative capabilities are DCs' commonalities across organisations (Wang, Senaratne, and Rafiq 2015; Pandza and Holt 2007). These capabilities are integral elements of DCs required to renew and create firms' resources and capabilities (Teece 2007; Eisenhardt and Martin 2000; Teece, Pisano, and Schuen 1997), and are mutually reinforcing internal capabilities (Wang, Senaratne, and Rafiq 2015). The value of a DC to a firm depends on the environmental needs and constraints, that is, it is context dependent (Helfat et al. 2007). Relative growth within the firm's operating environment is fostered by successful deployment of DCs (Makkonen et al. 2014). A proper measure of the effects of DCs is evolutionary fitness (Nelson and Winter 1982).

When businesses face adverse conditions, as they frequently do, their internal capacity and capability enable them to overcome such internal and external turbulence, and facilitate business growth (BIS 2013). Such capabilities include the skills of business owner-managers³⁹ and employees that provide the absorptive capacity for the business to overcome difficulties (BIS 2013). Skills have a positive effect on labour productivity and innovation activity with a relationship between a country's level of skills and its economic growth (BIS 2013).

It is imperative for firms to constantly scan the environment, learn and respond to change, especially in fast changing environments where technological innovations are introduced by external sources (Protogerou, Caloghirou, and Lioukas 2012). In such environments, DCs can be considered as enablers with which firms continually build and renovate operational capabilities more efficiently than competitors (Protogerou, Caloghirou, and Lioukas 2012). In the context of a more or less dynamic environment, organisations may not be able to cope

³⁸ 'The ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends' (Cohen and Levinthal 1990: 128)

³⁹ Such as is the case of small businesses.

with the renewal challenges should they possess only certain excellent capabilities, as competitive advantage will not result from the mere exploitation of already existing strategic assets (Protogerou, Caloghirou, and Lioukas 2012).

2.5.2 Development of Dynamic Capabilities

Organizational routines may represent recurring patterns of activities effected by individuals within the organization, with a direct positive impact on innovation orientation and innovation performance of the business – the aggregate or firm level outcomes (Zhou and Uhlaner 2009). Such actions by individual employees could be considered the micro-foundations for the routines that could lead to the firm's (realized) knowledge capacities (such as absorptive and transformative capacities) at the organizational level (Zhou and Uhlaner 2009).

The development and effective use of DCs through repetition and learning (Zollo and Winter 2002), and their use in transforming the firm's VRIN resources (Bowman and Ambrosini 2003), are most likely to be path dependent (Ambrosini and Bowman 2009). Thus the firm's future is likely to be constrained and influenced by its past and present activities (Teece, Pisano, and Shuen 1997). This demonstrates the critical importance of path dependence in DCs' development. For example, Madhok and Osegowitsch (2000) use empirical data from the international biotechnology industry to underscore the importance of country of origin in shaping a firm's experiences, and the consequent knowledge and capabilities it acquires.

Leadership - the capability of decision making, risk taking, and creation of a learning culture within the firm - is an enabler of DCs (Rosenbloom 2000), and performs an important part in an organisation's evolution and that of its DCs (Salvato 2003). For instance, in a dynamic environment, the adoption of an innovation strategy which encourages employees to persistently exploit necessary resources in business networks is vital in developing DCs (Jiao, Alon, and Cui 2011). In addition to leadership, other internal factors affecting the deployment of DCs include trust and social capital (Ambrosini and Bowman 2009). Social capital is vital for DCs as it allows for information sharing, innovation and novel ways of thinking that facilitate senior management's understanding of resource acquisition, integration and release of resources (Blyler and Coff 2003). Also, trust is a DC enabler, which together with leadership, are important at leveraging a firm's DCs, considering their importance in

establishing a climate within the organisation that is right for learning, deployment of DCs and creation of resources (Pablo et al. 2007).

2.6 ANTECEDENTS OF DYNAMIC CAPABILITIES

Because smaller businesses within SMEs do not usually possess resources that enable accounting function to be provided in-house, they often seek external support and advice from accountants, principally from small accountancy practice firms (Doving and Gooderham 2008). Similarly, because SMPs are resource constrained, they, particularly the smaller firms, find it difficult to provide all necessary services required by clients and potential clients, as clients demands may change with changes in their operating environment. Also, with such resource constraints, SMPs may not also have enough latitude for flexibility and adaptability in their service provision, in response to changes, such as increased competition or technological advances, in their own operating environment.

In the attempt to adapt to their market environments, firms exhibit two search behaviours: search in the neighbourhood of the existing practice or look for completely new alternatives (Cyert and March 1963). Firms can also search internally or externally (Nelson and Winter 1982), or they can exploit their current practices or explore new practices (March 1991), or they can be ambidextrous (O'Reilly and Tushman 2008). Thus firms can adapt to their habitat through learning processes, and may have a degree of control over their competitive environment (Cyert and March 1963). For instance, customer and competition oriented firms would be capable of developing suitable adaptive capability in highly competitive markets (Zhou and Li 2010).

The possession of accumulated knowledge gained from OL allows learning associated with that knowledge (Cohen and Levinthal 1990) which implies that, in seeking knowledge, firms initially seek new knowledge in the neighbourhood of knowledge they possess (Nelson 1991; Nelson and Winter 1982). For instance, difficulty at altering R&D activity, resulting from labour or capital market imperfections⁴⁰ (Himmelberg and Petersen 1991; Grabowski 1968) implies that the level of existing R&D is affected by the level of R&D conducted in the past (Helfat 1997), as well as the future level. This possible effect on future level of R&D

⁴⁰ This relates to the limitation in the availability of, and in acquiring, the necessary resources – labour, capital, etc. - that are specifically relevant to the needs of the firm.

operation as well as the new or incremental knowledge accumulated from OL reiterate the relevance of path dependence to capabilities development (e.g. Benner and Tushman 2003; Teece and Pisano 1994).

Organisational processes⁴¹ that accurately record the different experiential knowledge at group and individual level within the business enhance the creative capacity of the organisation and increase heterogeneity and uniqueness of resources (Muthusamy and Palanisamy 2004). By so doing, a flexible knowledge structure is developed that could effectively respond to the dynamism and complexity of the environment (Muthusamy and Palanisamy 2004).

Absorptive capacity, a vital knowledge-based capability that underpins the functioning of both operating and DCs, with routines to acquire, assimilate, transform, and exploit (Newey and Zahra 2009), enables the harnessing of new knowledge to enhance innovativeness in a firm (Zaheer and Bell 2005). An organisation's capability to adapt is its ability to recognise and capitalise on emergent business opportunities (Wang and Ahmed 2007), and to reconfigure its resources and coordinate its processes in order to face off environmental turbulence (Zhou and Li 2010). Triggers for the need to leverage such adaptive capability can be through exogenous shocks or endogenous entrepreneurship (Newey and Zahra 2009).

2.6.1 Learning, Knowledge Accumulation and Dynamic Capabilities

A firm's knowledge is its most important resource, with the pursuit of unique pathways and integration of specialised knowledge of its employees forming the foundation for developing DCs (Conner and Prahalad 1996; Nonaka 1994; Leonard-Barton 1992), organizational routines and competencies (Teece and Pisano 1994; Grant 1991). Knowledge-capital is the accumulated knowledge of a single or number of networked organisations,⁴² continuously improved by information exchange, and utilised in creating value (Laperche and Liu 2013). In turbulent business environments, such knowledge capabilities are particularly important as they become the bedrock to successfully formulate strategy (Grant 1996; Prahalad and Hamel 1990).

⁴¹ This is especially in knowledge-intensive firms.

⁴² Laperche and Liu (2013) highlight that this is embedded in the routines, technologies, machines and ability of individuals within the business

Production and innovation of knowledge are shared processes developed in complex innovation networks (Laperche, Uzundis, and von Tunzelmann 2008), with a firm's pre-existing know-how a vital resource in the accumulation of knowledge (Helfat 1997; Teece 1980). Economies of scope can be achieved through the firm's underlying expertise within specific domains/units, as well as from direct or indirect transfer of knowledge between its business units (Penrose 1959).

Because knowledge assets cannot readily be traded, they must be developed internally by firms (Makadok 2001; Teece 2000); and must also be effectively used in-house so that their maximum value could be realised by the business (Teece 2000). Knowledge assets cannot be bought because there is an incomplete and inefficient market for know-how, resulting from the difficulty to articulate and codify tacit knowledge (Teece 2000). Furthermore, the absence of a well-developed market for knowledge and the impossibility to entirely outsource innovation, have compelled firms to innovate internally, although such internal efforts can be successfully augmented through technology transfer and external acquisition activities (Teece 2000). In a complex and dynamic environment, a critical success factor is for the firm to build a knowledge seeking culture⁴³ (ACCA 2012).

A firm will effectively match its opportunities with its capabilities and generate strategic alternatives that are economically feasible by adopting a knowledge-based approach to strategy formulation, as well as a knowledge management process that enables it to effectively leverage the creative potential and knowledge of its employees, and enhances the firm's innovativeness, adaptability, and to create value for its shareholders/owners (Muthusamy and Palanisamy 2004). Development, acquisition, ownership, combination, recombination, protection, deployment and reconfiguration of knowledge assets, rather than physical assets, and in line with changes in the competitive environment, provide the underpinnings for competitive advantage in the new economy (Teece 2000). Therefore, the organisation needs to ensure the interrelationship between knowledge management and strategy (Muthusamy and Palanisamy 2004). Considering that some senior executives have DCs that can facilitate strategic change (Rosenbloom 2000), it is probable that differences in benefits conferred by these capabilities are due to variation in managerial cognition (Adner and Helfat 2003).

⁴³ That is, an organisational environment that is open to external ideas and in which participants are encouraged to forge a network of strong working relationships across the entire business ecosystem needs to be nurtured (ACCA 2012).

Although knowledge management itself may not be sufficient in completely overcoming diminishing returns, it can be an important component of competitive strategy and foundation for competitive success by assisting the firm in pushing the limits of its business model. Knowledge management may also enable a more effective leverage of customer capital (Teece 2000). A knowledge-based approach to strategy formulation and implementation starts with competence of people (Sveiby 2001). In this regard, promoting a climate favourable to personal mastery has a positive influence on the DCs of OL and OI through the generation and maintenance of organizational creative pressure (Senge et al. 1994).

Learning involves various modes of knowledge acquisition, from deliberate learning (Zollo and Winter 2002) to unplanned learning (Moorman and Miner 1998). Also, although information technology (IT) assists the storage, retrieval and transfer of codified knowledge, it must be assisted by, and co-aligned to, other organisational processes, so that it could be leveraged to enhance learning, productivity and competitive advantage (Teece 2000). Thus, to remain competitive, a firm must continuously learn, using knowledge management tools and techniques to build and sustain competitive advantage.

Muthusamy and Palanisamy (2004) argue that a comprehensive learning and cognition-centred strategy framework combining deductive and inductive learning of employees (including managers) is a better model of strategic thinking and action for firms in a complex and changing environment. The conversion of tacit knowledge to codified or explicit knowledge (facilitated by such a strategy) assists in knowledge transfer, storage, reference, redeployment and sharing, thus enabling organisations to be more innovative and productive (Teece 2000).

Furthermore, manager integration power, external linkages, and codification of experience are important drivers of dynamic learning that fosters dynamic knowledge articulation in service alliance firms (Lee, Chen, and Shyr 2011). This shows that idiosyncrasies in knowledge acquisition mechanisms account for the differentiation of DCs across firms (Chirico and Nordqvist 2010). Teece (2000: 51) posits that firms that succeed will be knowledge-based and 'high-flex.'

George et al. (2001) argue that knowledge flow influences the capability development of an alliance. Alliances are mechanisms for sharing knowledge (Fombad, Boon, and Bothma 2009; Gomes-Casseres, Hagedoorn, and Jaffe 2006), can facilitate knowledge absorption between

partners and can strengthen in turbulent, high-pressure environments (Lee and Cavusgil 2006). In service alliance firms, dynamic learning can assist firms in facing external challenges and in boosting their competitive advantage (Lee, Chen, and Shyr 2011; Winter 2003).

The cognitive capability and learning of individual managers (Ambrosini, Bowman, and Collier 2009) are the drivers (antecedents) of managerial dynamic capability (Helfat and Peteraf 2015). Also, the level of performance of different mental activities, controlled or automatic, depends on prior experience, with differences in contextualised training and likely to lead to heterogeneity in cognitive capabilities (Weber and Johnson 2009; Ericsson and Lehmann 1996). Moreover, dynamic learning is considered a driver of dynamic knowledge articulation and a source of DCs in service alliance firms (Lee, Chen, and Shyr 2011).

Using perception and attention as dynamic managerial capabilities to highlight path dependence of DCs, Helfat and Peteraf (2015) note that knowledge gained from past experience shapes the perception of new experiences, and rapid pattern recognition result from years of constant practice (Ericsson 2006). Also, knowledge management is more multifaceted than just managing people, and involves HRM, managing intellectual property, and managing the development and transfer of industrial and organisational know-how (Teece 2000).

DCs are typically the outcome of experience and learning within the firm, and such capabilities directly impact the resource base of the firm, which in turn is the source of the firm's competitive advantage (Ambrosini and Bowman 2009). Teece (2000) posits that the entrepreneurial function of firms in the new economy is more critical than the administrative one, as frequent outsourcing of the latter could occur without loss of competitive advantage.

Issues such as absorptive capacity that are rooted in education and experiences, social, professional and hierarchical contexts are important, with knowledge brokers needed to effectuate the transfer of knowledge (Teece 2000). Thus the greatest potential for economies of scope may result from the reliance on knowledge (including R&D) in established and related technologies as there is relatively less accumulated knowledge base in less well-developed (speculative) technologies (Helfat 1997).

Knowledge and capabilities are scarce, often difficult to imitate and generally have to be built, although sometimes could be bought (Teece 2014). In a firm, learning processes are dynamic and multilevel, as individually generated knowledge is shared within the organisation, with some of it becoming institutionalized as organizational objects (Protogerou, Caloghirou, and Lioukas 2012). Organisational learning gives rise to DCs (Zollo and Winter 2002; Teece, Pisano, and Shuen 1997) and underpins all aspects of the ability of a firm to sense and seize opportunities and reconfigure its capabilities (Teece 2007).

2.6.2 Dynamic Capabilities and Resource Endowments: SMPs & SMEs

DCs are able to influence an organisation's performance (Cao 2011). Some firms use DCs more than their competitors, resulting in relatively higher performance because such capabilities allow an enterprise to alter its processes, services and products (Drnevich and Kriauciunas 2011). This implies that some firms may be better at adaptation than others (Helfat et al. 2007). For instance, in the case of small accounting practices in Norway, while certain practices did succeed to develop resources that allow them to concentrate on delivering the more profitable services related to business advisory, only a number of these accounting firms provide services that are very limited in scope (Doving and Gooderham 2008).

In general, a firm's resource base includes labour, capital, technology, knowledge, and property rights, and its organisational structure and capabilities⁴⁴ required to support its productive functions (Jantunen et al. 2005). 'Resource endowments are critically important for new firms and that the development of DCs is a likely mechanism for their performance effect' (McKelvie and Davidsson 2009: S66). Such resource endowments may also be critical to SMPs (as SMEs). A priori, most firms with inadequate resources (or are resource-impooverished) fall within the SME category, with the smaller firms being most particularly resource-impooverished. For instance, it is argued that smaller SMEs will not obtain the advantages from DCs than larger firms due to scale and scope economies for any learned capability (Arend 2014). Also, because having adequate resource base is critical for businesses (Brush, Greene, and Hart 2001), strategies that involve product and market innovation are not engaged by firms with inadequate resources (Borsch, Huse, and Senneseth 1999).

⁴⁴ These include structures, routines and processes.

Smallness of an enterprise is often due to: (1) capital access restrictions arising from imperfections in capital markets caused by factors including informational hazards and lack of collateral in knowledge-based businesses (e.g. Amit, Glosten, and Muller 1990); (2) a choice of initial form, as a way to mitigate the risks from the many uncertainties that new ventures face⁴⁵ (e.g. Venkataraman 1997); (3) the appropriate choice by the entrepreneur to match the scale of small opportunities (Arend 2014). The globalisation of capital markets and reduction of information asymmetries between borrowers and lenders, however, are eroding access to capital as a key determinant of competitive advantage (Teece 2000).

Valuable resources and capabilities that can be explained from a knowledge-based perspective can be acquired by businesses through collaborations (Teece, Pisano, and Shuen 1997; Barney 1991). Processes, routines and systems that encourage the heterogeneity and continuous development of external alliances and human capital are important in developing relevant DCs (Doving and Gooderham 2008).⁴⁶ Organisational processes are combinative capabilities by which businesses synthesize and acquire knowledge resources, and generate new applications from those resources (Kogut and Zander 1992). Achieving heterogeneity of human capital involves recruiting frontline staff with requisite knowledge, experience and skills (Doving and Gooderham 2008).

Firms that employ skilled labour and provide training are more likely to survive (BIS 2013; Collier et al. 2008), with probability of closure declining sharply with the provision of some training (Collier et al. 2008). Thus, a skilled workforce is an important enterprise resource and a key factor in the ability of a firm to be adaptable to changes in its competitive environment.⁴⁷ Furthermore, resources and capabilities are moving targets where a firm engages in a continuous search for its objectives and external environment to be aligned, with the change in resources between any two points in time often a large share of the total resource base for new firms (McKelvie and Davidsson 2009). Similarly, for an SMP with probable limited resource base, any change in resources may be significant relative to its total resource base.

⁴⁵ Including technology, customer, competition, liquidity

⁴⁶ Routines are behaviour that are ‘learned, highly patterned, repetitious, or quasi-repetitious, founded in part in tacit knowledge—and the specificity of objectives’ (Winter 2003: 991).

⁴⁷ For instance, in a study of the impact of education and training on economic performance, 39% of firms that provided no training to employees were observed to close, compared to 14% of businesses that provided two or more days of training (Collier et al. 2008).

While firms with fewer resources may not be able to afford ambidextrous strategies, wealthier organisations have asset base with which simultaneous exploitation and exploration can be conducted (Kristal, Huang, and Roth 2010). Therefore the capability of a firm to achieve ambidexterity may be influenced by its resources (Kyriakopoulos and Moorman 2004). The continual development of firms is contingent on DCs which require a richer resource base for their development (McKelvie and Davidsson 2009). For example, although barriers to entry in an industry (or sector or market) may be almost non-existent, barriers to survival for new firms may be enormous (Geroski 1995), as extreme lack of adequate resources may prevent growth and dynamic development (Baker and Nelson 2005).

Amongst SMEs, external knowledge acquisition strategies are especially helpful and appear to foster innovation by improving their ability to identify new opportunities from the external environment (Zhou and Uhlaner 2009). In order to stimulate innovation performance, directors in SMEs need to learn how to network more effectively so as to make the best of the external environment (Zhou and Uhlaner 2009), through the use of a firm's absorptive and transformative knowledge capacities as well as their adaptive and adoptive capacities. Organisation wide knowledge engineering and management is the dynamic meta-strategic process leading to competencies and competitive advantage necessary for continuous growth and development (Muthusamy and Palanisamy 2004).

In RBV, capabilities are a kind of resource (Barney 1991) or resources in the general sense (Ambrosini and Bowman 2009), and are also processes for utilising such resources (Amit and Shoemaker 1993). VRIN⁴⁸ resources do not generate long-term enterprise value by themselves, since to achieve sustainable growth and survival of the firm, such resources must be managed intelligently or orchestrated, by a dynamically capable management team pursuing a good strategy (Teece 2014). It is critical for firms with VRIN resources to develop dynamic learning capability by creating a mechanism to absorb information and knowledge through iterative business practices (Cohen and Levinthal 1990).

The sorts of DCs that can be used as well as the effectiveness of their deployments are influenced by existing resources of a firm, their complexity, causality, ambiguity, embeddedness, and interdependence (Lavie 2006). Organizational capabilities shape and are supported by VRIN resources, and drive firm performance (Teece 2014).

⁴⁸ Valuable, Rare, Inimitable, and Non-substitutable

2.7 STRATEGIC ORIENTATION⁴⁹ AND DYNAMIC CAPABILITIES

The combination of DCs with good strategy (Rumelt 2011) enables the firm⁵⁰ to adapt to changes in its competitive environment, by deploying and redeploying its resources (Teece 2012). The responsibility and capability to evaluate and decide changes to the configuration and reconfiguration of the firm's resource base remain with senior management, even though elements of DCs may be embedded in the organisational structure (Teece 2012). For instance, the existence of turnaround CEOs and other turnaround specialists in the market for professional services is indicative of the fact that either change routines are not within the scope of some organisations, as they are perceived to be needed only occasionally, or certain firms have been unable to develop such routines (Teece 2012).

In order to successfully engage in exploration and exploitation, a firm requires a senior management team with cognitive and behavioural flexibility, to be able to establish and nurture a coherent alignment between its competencies, structures and cultures (O'Reilly and Tushman 2008). A firm's core competencies constitute its operational realisation of a complex pattern of decisions in the execution of its strategy (Roth and Menor 2003). The complexity of ambidextrous organizations involves costs that could lead to inferior financial returns, although when properly designed and managed, these organisations achieve sustainability and superiority in value creation (Van Looy, Martens, and Debackere 2005).

Senior management's entrepreneurial and leadership skills around sensing, seizing, and transforming are required to sustain DCs (Teece 2012). Considering the necessity to minimise internal conflict and maximise complementarities within and outside the firm, senior management's ability to attain periodic asset configuration and renewal, including the redesign of routines, is crucial (Teece 2012). It is also worth noting that although DCs reside mainly with a firm's senior management, they 'are impacted by the organizational processes, systems, and structures that the enterprise has created to manage its business in the past' (Teece 2007: 1346).

To implement an effective innovation management, an adequate relation between vision, strategy and innovation needs to be established (Lawson and Samson 2001). Strategy

⁵⁰ Especially its senior management

determines the configuration of resources, products, processes and systems that firms adopt to deal with their environmental uncertainty, and requires firms to make decisions about the businesses and functions to execute in various markets (Lawson and Samson 2001). Successful institutionalisation of innovation requires a well-defined innovation strategy and a common vision (Lawson and Samson 2001). Similarly, for an organisation to adequately respond to, or prompt, change in its competitive environment and build its competitive advantage, it needs to use its DCs of strategizing and execution excellence (Teece 2012), to identify the challenges posed by such environments prior to deciding on an effective policy approach (Rumelt 2011).

The market dynamics impact on the effectiveness of strategic orientation (Jaworski and Kohli 1993), with demand uncertainty and competitive intensity being the two most fundamental aspects of such dynamics (Voss and Voss 2000). When market demand is highly uncertain, competitor-oriented firms learn from competitors' information and intelligence in order to gain knowledge on competitive actions and industry trends (Day and Wensley 1988). Such knowledge is vital in determining appropriate reconfiguration of the resource base, to adapt to emerging changes (Hamel and Prahalad 1994). Competitor-oriented firms are, therefore, better prepared to develop appropriate competitive product offerings in response to changing customer preferences (Zhou and Li 2010; Porter 1985).

The entrepreneurial management function embedded in DCs is associated with a new hybrid of entrepreneurial managerial capitalism rather than confined to start-up activities and individual actors (Teece 2012). To be successful in entrepreneurial and managerial capitalism, firms and their managements must be entrepreneurial, that is, organised to be highly flexible and responsive. Also, the leadership and management skills of the business owner-managers and the skills of employees influence the absorptive capacity of a firm and its ability to withstand adverse conditions - skills that are important considering their significant impact on firm performance (BIS 2013).

The ability to accurately recognise a firm's knowledge and capabilities requires entrepreneurial capabilities that are lacking in many management teams (Teece 2014). EO describes a strategic orientation which portrays a firm's organizational autonomy, willingness to take risks, innovativeness, and proactive assertiveness (Walter, Auer, and Ritter 2006). The organizational and strategic routines by which managers transform their resource base to create new value-creating strategies are the consequences of DCs (Grant 1996). Also, the

creation, evolution and recombination of the firm's other resources into a competitive advantage is made possible by its DCs (Wu 2006). Because DCs partially resides with individual managers and the top management team (Teece 2014; Adner and Helfat 2003), such capabilities are rendered even more idiosyncratic (Teece 2014).

Pressures and tensions caused by processes internal to the firm and those in the external business environment must be addressed by the firm (Greiner 1998). EO represents the policies and practices that provide a basis for entrepreneurial decisions and actions (Rauch et al. 2009). Strong leadership, particularly, is capable of changing the routines and business model of the firm although such routines are bound by customs, heritage, and rules (Teece 2014). Additionally, an organisational environment that is open to external ideas and in which participants are encouraged to forge a network of strong working relationships across the entire business ecosystem needs to be nurtured (ACCA 2012).

The creation, shaping and development of capabilities are aided by managerial decisions (Dosi, Faillo, and Marengo 2008). The three organisational processes that support asset orchestration are coordination/integration, learning, and reconfiguration⁵¹ (Teece, Pisano, and Shuen 1997). For a firm to have strong DCs, it must (i) ensure the alignment of strategy and organization with anticipated changes in markets, technologies, and the business environment; (ii) be able to effectuate change in the underlying routines, i.e., the OCs (Teece 2014). Given its readiness and foresight to seize new opportunities, a proactive firm is a leader rather than a follower (Covin and Slevin 1990). Thus when leadership is wise, DCs are strong (Teece 2014).

2.7.1 Organisational ambidexterity and Dynamic Capabilities

Ambidexterity is rooted in the ability to explore and exploit, with individuals being important sources of a firm's effective ambidexterity (Raisch et al. 2009), on which an enterprise's long-term success depends (Levinthal and March 1993; March 1991). Exploration refers to risk-seeking, experimentation, flexibility, and innovation, while exploitation corresponds to control, certainty and risk reduction (Prange and Verdier 2011). Ambidexterity is, therefore, a specific capability embodied in senior management's learning and expressed through its

ability to, in changing circumstances, repeatedly orchestrate existing organizational assets and competencies (O'Reilly and Tushman 2008), to enhance organizational growth and adaptation (O'Reilly and Tushman 2008; He and Wong 2004; Markides and Charitou 2004).

Ambidexterity becomes a DC if the firm's resources are repeatedly and deliberately reconfigured by senior management (O'Reilly and Tushman 2008). DCs comprise and integrate both static and dynamic components, with the interaction of exploitation and exploration⁵² expected to, over time, become a DC that is fully developed (Schreyögg and Kliesch-Eberl 2007).

Integration and differentiation of exploitation and exploration are complementary mechanisms for achieving organizational effectiveness, with the relative balance between integration and differentiation dependent on the current specific task (Raisch et al. 2009). Also, ambidexterity creates challenges that require continuous managerial attention (Raisch et al. 2009), as managers must engage in paradoxical thinking (Gibson and Birkinshaw 2004), fulfil multiple roles (Floyd and Lane 2000), and manage contradictory and conflicting objectives (Smith and Tushman 2005).

While differentiation is the separation of exploitative and explorative activities into distinct organizational units, integration is the mechanisms by which firms address exploitative and explorative activities within the same organisational unit (Raisch et al. 2009). For instance, in an ambidextrous business unit, two functions or subdivisions with different foci could be created (Benner and Tushman 2003), enabling employees, including managers, to simultaneously engage, substantially, in both exploration and exploitation activities (Gibson and Birkinshaw 2004). Similarly, in an ambidextrous manufacturing two different teams could be created, with one responsible for exploration and the other responsible for exploitation (Adler, Goldaftas, and Levine 1999), and in a single team that is ambidextrous, different roles could be assigned to each individual (Jansen et al. 2009).

Firms should temporarily and sequentially implement routines for exploitation and exploration (Siggelkow and Levinthal 2003; Nickerson and Zenger 2002) as such dynamic sequencing may result in sequential ambidexterity (Venkatraman, Lee, and Iyer 2007; Puranam, Singh, and Zollo 2006). However, while such temporal sequencing may, in certain instances, result in ambidexterity (Raisch et al. 2009; O'Reilly and Tushman 2008), it is based

⁵² The ambidextrous form

on the assumption that markets and technologies change at rates that permit an organisation to sequentially choose its alignment (O'Reilly and Tushman 2008). Furthermore, as dynamic organisational alignment is required rather than static configurations (Zajac, Kraatz, and Bresser 2000), continuous orchestration of organisational activities is necessary for adaptability to changing its internal and external environments (Siggelkow 2002; Webb and Pettigrew 1999).

Research on innovation and knowledge processes stresses the importance of external acquisition of new knowledge for exploration, while those on DCs outline the importance of the interplay between internal and external knowledge processes in corporate renewal (Raisch et al. 2009). Ambidexterity may depend on the firm's ability to integrate internal and external knowledge bases, with such ability relying on a combination of external brokerage and internal absorptive capacity, and likely supported by social networks that contrast internal and external as well as strong and bridging ties (Raisch et al. 2009).

Applying ambidexterity perspective in the context of a firm's technology sourcing strategy, Rothaermel and Alexandre (2009) contend that a firm's organizational and technological boundaries are important when sourcing technology, and that an overly strong reliance on either internal or external sourcing would have negative performance implications. Also, for firms to harness the benefits of ambidexterity, they should have adequate absorptive capacity, to enable managers to actively manage spillovers from internal and external technology sourcing (Raisch et al. 2009).

Organisational adaptation requires both exploitation and exploration, but there is continuous threat to adaptation by the difficulty or impossibility of having an optimal mix of exploitation and exploration (March 1996). This difficulty is due to the competition for resources by exploration and exploitation, coupled with the differences required from the mind-sets and organizational routines (Duh 2013). However, simultaneous pursuit of exploration and exploitation is possible by having different organizational units or different parts of organisational unit specialised, to an extent, on sensing as compared to seizing (Teece 2007). Moreover, ambidexterity is fostered by close interrelations between existing and new knowledge, with a synergistic effect achieved by allowing existing resources to be more fully employed to acquire new capabilities and by permitting new knowledge to be more fully integrated into the existing resource stock (Cao, Gedajlovic, and Zhang 2009). This shows the need to combine differentiation approaches with integrative efforts so that the full potential of

ambidexterity could be attained (Raisch et al 2009).

In order not to undermine the coordination required for an equitable exploration and exploitation, senior management team should agree on the strategy and importance of ambidexterity, and should be able to manage the conflicts and interface issues occasioned by the ambidextrous form (Lubatkin et al. 2006; Smith and Tushman 2005). Therefore, as the sustainability of ambidexterity requires diverse solutions, including structural and contextual, its management requires a dynamic rather than static approach (Raisch et al. 2009; Westerman, McFarlan, and Iansiti 2006; Siggelkow and Levinthal 2003). For instance, the provision of a shared vision (Jansen and George 2006), or a clear vision (Sidhu, Volberda, and Commandeur 2004) as well as an incentive system for senior management team that is tied to overall firm performance rather than to the success of a separate unit (Raisch et al. 2009) are positive determinants of a successful pursuit of ambidexterity.

As a useful dynamic capability, ambidexterity embodies a complex set of routines that must be repeatable, and include decentralization, differentiation, targeted integration, and the ability of senior leadership to engineer the complex trade-offs that ambidexterity requires (O'Reilly and Tushman 2008). Such trade-offs include the ability to attend to and deal with the strategic contradictions associated with exploration and exploitation (Smith and Tushman 2005). These complex routines and ability, founded in part on tacit knowledge, require long-term commitments to specialized resources (O'Reilly and Tushman 2008), and can be developed and are difficult for competitors to imitate (Teece 2007). When management has the ability to consciously and repeatedly deploy firm assets and resources, ambidexterity becomes a dynamic capability which, in turn, enables a firm to reconfigure existing assets and learn new capabilities to both explore and exploit (O'Reilly and Tushman 2008).

Above all, the costs and benefits of developing and implementing a dynamic capability should be evaluated and balanced, so that too much change is not engineered and costs that exceed the competitive value achieved from the change are not incurred (Winter 2003). Deciding which of the various potential but uncertain investments should be undertaken, while recognizing the likelihood of trade-offs or other interactions among them, is fundamental in making profitable capability investments (Winter 2003).

2.7.2 Ambidexterity in SMEs (including SMPs)

Organizational ambidexterity may be achieved where CEOs have the ability, as leaders, to encourage an increased behavioural integration within the senior management team, given their (CEOs) unique position engendered by their duty to select, evaluate, motivate, and coach those in senior management (Lubatkin et al. 2006). In larger firms, the quest for greater ambidexterity may encourage senior management to create business units that are structurally separate, and concentrate on either exploration or exploitation, rather than strive at creating business units with the capacity to pursue both (Lubatkin et al. 2006). In SMEs, however, size and resource constraints would not allow separately distinct units to be created.

Because SMEs lack the mechanisms that can facilitate the attainment of strategic combinations of exploration and exploitation, they have to rely more on the ability of their senior management team (Lubatkin et al. 2006). Also, with fewer hierarchical levels, it is more probable for senior management in SMEs to assume both operational and strategic responsibilities which enable them to directly experience the complexity of competing knowledge requirements inherent in simultaneously pursuing exploitation and exploration (Lubatkin et al. 2006). Therefore, to the extent that the internal processes of senior management facilitate ambidexterity (Tushman and O'Reilly 1996), the degree of senior management team's behavioural integration in SMEs is central to effectively cope with, and integrate, the different and contrasting needs occasioned by an ambidextrous orientation (Lubatkin et al. 2006).

Most successful enterprises are ambidextrous, that is, they simultaneously implement exploitation by consistently and efficiently managing their existing business demands while adapting to environmental changes (Makkonen et al. 2014). In order to strike an adequate balance between exploitation and exploration resources and maximise performance in a highly innovative company, controls and management practices that enable the to manage the frictions of growth and innovation versus control should be in place (Lawson and Samson 2001). Therefore for firms⁵³ to achieve the simultaneous exploitation of existing competencies for short-term commercial gains, and exploration of new competencies for sustainable success (Gibson and Birkinshaw 2004), they must develop and implement DCs that enable them to

⁵³ Particularly for firms that operate in high-tech industry.

pursue opportunities in new and potentially effective ways (Zahra, Sapienza, and Davidson 2006).

The paradoxical requirements of exploitation and exploration can be resolved by externalising one or another set of activities through outsourcing or by establishing alliances (Lavie and Rosenkopf 2006, Rothaermel and Deeds 2004). Although this may be a good strategy for firms with limited resources to pursue ambidexterity in house (Raisch et al. 2009), the externalization of exploitation or exploration processes may be harmed by difficulties in realising strategic integration across independent firms (Benner and Tushman 2003).

2.8 DYNAMIC CAPABILITIES AND ENVIRONMENTAL DYNAMISM

Organisations are complex but are capable of adapting to environmental changes (Battram 2002). Adaptability gives enterprises greater chance to survive (Smallbone, North, and Leigh 1993). To survive, firms could adopt completely conservative selling strategies; however, to survive as well gain competitive advantage, an organisation must enhance both its product quality and range, and manage its product profile (Reid, Jacobson, and Anderson 1993). This would lead to the firm's long-term improvement in performance. Therefore, to adjust the firm's fit to its environment, to enable it to survive and be successful, requires some strategic management capability (Mole 2004).

DCs are 'the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments' (Teece, Pisano, and Shuen 1997: 516), and 'include difficult-to-replicate enterprise capabilities required to adapt to changing customer and technological opportunities' (Teece 2007: 1319-1320). The operational, market and cognitive environments make up a firm's environment (Duh 2013). Volatility and environmental unpredictability are fundamental attributes of environmental dynamism (Miller and Friesen 1983), and include market demand uncertainty, structural changes in industry, and probability of environmental shocks (Sirmon, Hitt, and Ireland 2007). With persistent uncertainty in the competitive environment, environmental turbulence is a real possibility that requires senior management to develop strategies such as systematic, organisation-wide approaches for scanning future external environment that are adaptable to different economic and market circumstances (ACCA 2012).

Increased environmental dynamism may cause changes in the overall competitive environment as well as the nature of competition, raising challenges for the firm (Tallon 2008; Chmielewski and Paladino 2007; Miller and Friesen 1983). The link between DCs and competitive advantage is relatively weaker in low or high level of dynamism, but strongest under intermediate levels of dynamism (Schilke 2014a). Therefore, for firms to maintain competitive advantage in a turbulent and changing environment, they must use their DCs, and continuously invest, evolve, and develop their resource base to create new strategic growth alternatives (Bowman and Ambrosini 2009). In environments with increasing returns, firms need superior technology, complementary assets and strong DCs to sense and seize opportunities, and to enable the development of products/services that could potentially become industry standards (Teece 2000).

In moderately dynamic environments, capabilities 'are detailed, analytic, stable processes with predictable outcomes' whereas in highly dynamic environments 'they are simple, highly experiential and fragile processes with unpredictable outcomes' (Eisenhardt and Martin 2000: 1105). Thus, the deployment of DCs is influenced by environmental attributes such as uncertainty and complexity (Aragon-Correa and Sharma 2003), in addition to the firm's resource base and senior managerial interpretation of the degree of environmental dynamism. To this end, Ambrosini, Bowman, and Collier (2009) propose three levels of DCs – incremental, renewal, and regenerative – with managerial perception of environmental dynamism determining the deployment of each level, with a variation in the extent of associated organisational change, ranging from minor, where incremental capabilities are deployed, through to major, where regenerative capabilities are applied.

In environments of low dynamism, organisational routines for adapting the resource base may be of reduced value, particularly when considering the costs associated with them (Schilke 2014a). In such environments, consistent exploitation of existing resources are rewarded (Teece 2007; Leonard-Barton 1992), while persistent reconfiguration of resources may disrupt the efficiency and value potential of the firm's resources (Schilke 2014a). For instance, in relatively stable environments, certain activities directed at the incremental development or enhancement of existing resources could be considered DCs (Ambrosini and Bowman 2009). Thus DCs could be of lesser importance for a firm's competitive advantage when environmental dynamism is low (Schilke 2014a).

Firms use DCs to ensure a continuity of current operations (Drnevich and Kriauciunas 2011), but because of the inadequacy of such capabilities to enable the firm to effectively respond to changes in unstable environments (Leonard-Barton 1992), the contribution of DCs to relative firm performance would be reduced (Drnevich and Kriauciunas 2011). In consolidating/declining industries, efficiencies is the core basis of competition (Porter 1980), and the contribution of DCs to improve current firm activities is more important in contributing to performance (Drnevich and Kriauciunas 2011); however, the use of DCs to respond to market changes is important for competitive advantage and organisational survival in environments of increased dynamism.

In very dynamic environments, organizational units must have considerable autonomy in order to make rapid decisions, while remaining connected to activities that have to be coordinated (Teece 2007). To achieve and implement such autonomy and connectedness is an important micro-foundation of DCs (Duh 2013). Also, in markets with demand uncertainty, firms may fail to effectively adapt to changes if their resource allocation are geared towards an incorrect path (Christensen and Bower 1996). Moreover, these environments are characterised by complex changes at all levels, including structural changes that increase competitive pressures and create challenges for businesses, thereby reducing the positive effect of customer orientation on adaptive capability (Zhou and Li 2010).

Environmental uncertainty presents different challenges to senior management who has the option of sticking to a specific decision or build a high degree of adaptive capacity (Wang and Ahmed 2007). However, sticking to a specific course of action runs the risk of picking the incorrect course, while adopting a high degree of adaptive capacity approach may be costly if competitors have chosen a particular path and have not incurred the costs of building and maintaining capacity to adapt and flex the organization (Ambrosini and Bowman 2009). Firms, therefore, need to have both deliberate insight into environmental changes, and the ability to shape their operating capabilities to align with the new environment, if they are to survive in dynamic, complex and changing environments (Jiao, Alon, and Cui 2011).

If the firm is to sustain itself as customers, competitors, and technologies change, it is essential that it continuously or semi-continuously engages in the three DCs clusters⁵⁴ of

⁵⁴ DCs can essentially be split into three primary groups: ‘(1) identification, development, co-development, and assessment of technological opportunities in relationship to customer needs (sensing); (2) mobilization of resources to address needs and opportunities, and to capture value from doing so (seizing); and (3) continued renewal (transforming)’ (Teece 2014: 332).

sensing, seizing, and transforming (Teece 2007). As dynamism in the market environment comes in various forms, the importance of DCs varies according to the nature of the instability (Makkonen et al. 2014). The combination of effort, luck, alertness and flexibility result in the successful identification of strategic opportunities or options (Denrell, Fang, and Winter 2003). In order to capitalise on opportunities, new processes, methods, business models, and complementary assets are required (Jantunen et al. 2005).

When the level of environmental turbulence requires more efficiency than change, the organisation's use of DCs does not need to be increased; consequently, the contribution of such capabilities to business performance will be decreased (Helfat et al. 2007; Miller and Friesen 1983). This implies that DCs' contributions to relative firm performance depends on the degree of dynamism faced by the business, and may decrease rather than increase as environmental dynamism increases (Drnevich and Kriauciunas 2011).

Because of the degree and frequency of change in environments that are extremely or highly dynamic, DCs could be unable to contribute to increased corporate performance (Helfat et al. 2007) due to the existence of core rigidities (Ambrosini and Bowman 2009). In such environments, adequate fit⁵⁵ cannot be ensured due to difficulty in managing relevant DCs (Tallon 2008). Thus the adaptation of resources ought to be in line with changes in a firm's competitive environment. External fit is an important determinant of the effectiveness of DCs because in environments with finite resources, DCs provide a basis for firms to compete and adapt to competitive pressures and to survive (Wilden et al. 2013). For instance, it is more difficult for manufacturers to achieve superior performance in increasingly dynamic environments due to the challenges imposed by such environments (Kristal, Huang, and Roth 2010).

Managerial vision, control, and direction (and manager's perception of environmental states (Ambrosini, Bowman, and Collier 2009)), are key drivers of DCs. These are important (Zahra, Sapienza, and Davidsson 2006) in the continuous incremental changes, periodic renewal, and infrequent application of generative capabilities to a firm's resource base (Ambrosini, Bowman, and Collier 2009). As firms in environments with increasing opportunities, despite a crisis, benefit from both regenerative and renewing DCs, the relative significance of the various capabilities depends on the extent of the environmental turbulence (Makkonen et al. 2014).

⁵⁵ Between capabilities and the environment

DCs depend not only on the existence of the underlying organizational routines, but also in the context in which these capabilities are deployed (Sirmon and Hitt 2009; Levinthal 2000). Effective modes of organizational adaptation are partly determined by environmental dynamism, a contextual variable in DCs theory (Helfat and Winter 2011; Helfat et al. 2007; Zahra, Sapienza, and Davidsson 2006). In industries in which business opportunities have diminished because of strong environmental turbulence, higher-order DCs regarding observation and evaluation particularly show a positive effect on firm performance (Makkonen et al. 2014).

Although a firms' success or existing competence is often the result of its capabilities for adaptation to its environment, such successful adaptation tend to be perceived as a rationale for existing organisational norms, logic and practices, thus rendering the firm less receptive to exploring new knowledge and less prepared to adapt to future environmental changes (Wang, Senaratne, and Rafiq 2015). As DCs are about adaptation, orchestration, and innovation, strong DCs enable enterprises to stay congruent with market and technological developments, and with broader societal goals (Teece 2014). An enterprise must reconfigure internal and external resources in order to adapt to a rapidly changing industry environment (Amit and Schoemaker 1993).

2.9 CHAPTER SUMMARY

Businesses operate in changing internal and external environments. The rate of change does not only vary, but the variation cannot be accurately predicted. Such changes may include increased competition, change in customer demand, technological changes, and macro-economic changes. As the key objective of an enterprise (or entrepreneurship) is to gain sustainable improvement in performance, and create wealth (value) for its owner(s),⁵⁶ firms have to strive for improved performance, notwithstanding the environmental condition in which they operate. Even when the firm's objective is not profit making (as in not-for-profit organisations (e.g., Charities and NGOs)), firms still need to break-even if they have to survive and remain operational in the long-term. Therefore, even when a firm cannot make a profit, improved performance is still important for its survival.

⁵⁶ These include other stakeholders.

Because changes in environmental circumstances are beyond the control of individual firms, a firm needs to possess the capabilities that would enable it to survive, gain and maintain competitive advantage and create value. Such capabilities that enable the firm to sense, seize, and reconfigure its resources are its DCs (Teece, Pisano, and Shuen 1997). In line with Teece, Pisano, and Shuen's (1997) definition, the researcher defines DCs as a firm's unique capabilities (competencies, routines and processes) that are used to continually orchestrate the firm's resource base, in line with environmental dynamism, to enable it achieve sustainable improved performance and create wealth (value).

In stable business environments, or in environments with low change, a firm may use its operational or ordinary capabilities to maintain its performance and remain operational. Ordinary (operational) capabilities are a firm's day-to-day routines and processes. However, in dynamic environments, operational capabilities will not be adequate to facilitate the adaptability of the firm's resources vis-à-vis the environmental changes. In such environments, therefore, a firm will need DCs. A priori, in dynamic environments, SMEs, especially the small firms, may be particularly vulnerable, considering that due to economies of scope, the larger firms are usually able to encroach into markets served by SMEs. This reflects the situation in the accountancy practice sector in the UK, where survival is critical for SMPs, due to increased competition resulting from changes in regulation, changes in the wider economy, and the move by larger accountancy firms to provide services to SMEs - the client base of SMPs. Thus possession of DCs is critical to SMEs as well as SMPs, if they have to gain competitive advantage and sustained improved performance.

DCs cannot readily be bought and must be developed internally, over time, by senior management of the enterprise. Although they reside with senior management, organisational structure and routines may imply that DCs are organisation-wide. Such organisational routines include search, service acquisition, and release routines. In addition to organisational routines, DCs also depend in the context in which they are deployed (Sirmon and Hitt 2009; Levinthal 2000). This context includes both the nature of environmental dynamism and managerial interpretation of such dynamism. In moderately dynamic environments, DCs may not yield the same effect as in a low or high-velocity environment. For instance, since the development and deployment of DCs incur costs, in stable environments, DCs may not be necessary as the continuous disruption to the resource base, resulting from their deployment may have negative effect on corporate performance. Therefore, a cost-benefit analysis is

needed to ensure that deployment of DCs doesn't result in negative abnormal returns to the firm.

Development of DCs is constrained by the past and current activities of the organisation, implying that their development is path dependent. For example, learning and acquisition of new knowledge commences around knowledge already acquired by the firm. Leadership and strategic insight are also critical for development of DCs. Antecedents of DCs include ambidexterity, learning and knowledge accumulation, and resource endowments. Although capabilities may be common among firms (considering they are equi-final), the heterogeneity of DCs underline the differences in their contribution to firm performance. As it is senior management's responsibility to decide on the configuration and reconfiguration of the firm's resource base, strategic or entrepreneurial orientation is an important factor in the development of organisational capabilities.

CHAPTER 3: HYPOTHESES AND CONCEPTUAL MODEL DEVELOPMENT

The previous chapter on literature review analysed extant literature relevant to the research. In this chapter, the hypotheses and conceptual model for the research are developed. In developing the hypotheses, the theoretical foundation provided in the literature review is used as basis, with further arguments to support the hypotheses. This chapter proceeds as follows: introduction; hypotheses development; conceptual research model; and summary.

3.1 INTRODUCTION

DCs are multidimensional constructs that are based on collections of organizational routines (Winter 2003), whose dimensions are represented by specific patterns of activities (Schilke and Goerzen 2010). They are a firm's regular and rule-based behavioural patterns for interdependent actions (Nelson and Winter 1982). The key mechanisms by which organizations accomplish an effective change in their resource bases are the organizational routines, which are consistent with the capabilities of sensing, seizing, and transformation, as well as coordination and learning routines (Schilke and Goerzen 2010; Helfat et al. 2007; Teece 2007).⁵⁷

In very dynamic environments, continuous surveillance of markets and technologies as well as the willingness to adopt best practice (Teece, Pisano, and Shuen 1997), enable a firm to sense the need and ability to reconfigure its resource base in line with changes in its internal and external environments (Amit and Schoemaker 1993). However, as best practice may be standard practice in an industry, or is not constantly revised, it may not lead to achievement or maintenance of competitive advantage. Coordination routines aim at allocating resources, assigning tasks, and synchronizing activities, while learning routines pertain to the process of generating new knowledge and building new thinking (Teece, Pisano, and Shuen 1997).

The argument that by defining DCs as the 'routines to change routines' raises serious operationalization difficulties for quantitative studies (McKelvie and Davidsson 2009: S65) has been watered down, considering that many DCs constructs have successfully been operationalised in several quantitative studies (e.g. Piening and Salge 2015; Schilke 2014a;

⁵⁷ Helfat et al. (2007), Teece (2007) argue that coordination and learning routines constitute key aspects of the generic capability of seizing.

2014b; Arend 2014; Drnevich and Kriauciunas 2011; Jiao, Alon, and Cui 2011; Pavlou and El Sawy 2011; Schilke and Goerzen 2010; Zhou and Li 2010).⁵⁸

In this study, it is argued that firm level competencies are a firm's DCs, and differences in such firm level competencies (DCs) amongst firms would account for variation in relative firm performance and competitive advantage. In order to confirm or refute this argument, the foci constructs of DCs are determined and relevant hypotheses are then developed to set the bases for empirical testing.

3.2 DEVELOPMENT OF HYPOTHESES

3.2.1 Strategic Leadership [Strategic Orientation]

Strategy generally points the firm to the path it has chosen in order to achieve its set goals and objectives (Yeh and Sur 2015) that are defined following the determination of its mission (King 1978). Service strategy is concerned with integration and organizational learning issues, including: the types of relationships to be developed and nurtured with suppliers, the establishment and maintenance of communication and service networks, bridging of interfaces between functional areas, and acceleration of organisational learning (OL) and knowledge transfer (Roth and Menor 2003). Senior management's strategy with respect to innovativeness, being proactive, and risk-taking, referred to as entrepreneurial orientation (EO), is an essential attribute of high performing firms (Lee and Lim 2009; Lumpkin and Dess 1996; Covin and Slevin 1989).

Leader characteristics and leadership style are essential to encouraging innovative capability in organisations, with transformational leadership style more likely to encourage OI than transactional styles of leadership (Garcia-Morales, Llorens-Montes, and Verdu-Jover 2006). The role of leadership in making quality decisions, communicating goals, values and expectations, while motivating staff and other stakeholders is critical as organizational identification and commitment can greatly improve a firm's performance (Duh 2013). It is,

⁵⁸ For example, Schilke and Goerzen (2010) conceptualised the construct of alliance management capability as a dynamic capability, by building on the generic routines of coordination, learning, sensing, and transformation.

therefore, important for senior management to build loyalty and commitment for seizing opportunities (Teece 2007).

Although resource investment (a firm's acquisition and development of its resources) and resource deployment (the utilisation of such resources in specific markets) are essential to corporate success, striking an equitable balance between the two is important for firm performance (Sirmon, Gove, and Hitt 2008). An inappropriate balance between resource investment and resource deployment negatively impacts firm performance (Sirmon and Hitt 2009). Without good management (as exhibited through strategic leadership), such an appropriate balance would not be possible.

In order to optimise performance, managers should engage in human and physical asset orchestration (Sirmon and Hitt 2009), as effective deployment of these assets is necessary for customer value creation and higher firm performance (Priem 2007). EO is the capability that enables a higher impact of competencies on firm performance although it is not of central importance in long-term prosperity and growth of university spin-offs (Walter, Auer, and Ritter 2006). Since entrepreneurial orientation alone is not sufficient to compete in today's markets, entrepreneurial ambitions, in and of itself, do not create value (Walter, Auer, and Ritter 2006). Using data from the manufacturing and service sectors, Jantunen et al. (2005) contend that a firm's entrepreneurial orientation and its reconfiguring capabilities have an effect on its international performance.

Significant investments in resources that are not deployed effectively can have a negative impact on investment, and reduction in the level of investment in organisational assets that is not matched by deployment decision targeted at a market segment with simpler requirements would produce negative results (Sirmon and Hitt 2009). This is because such resources would be inadequate to meet the changing demands of the market. Therefore, for resource deployment to be effective, the contingent relationship between the level of resource investment and market demands should be considered by managers (Sirmon and Hitt 2009).

Essential elements in the DC framework include sustaining value through disciplined strategic-management actions, proactive strategic orientation, and value creation through the recognition of entrepreneurial opportunity (Jantunen et al. 2005). As a service firm's performance is positively impacted by most EO dimensions, it is important to develop EO among owners of SME service firms (Lee and Lim 2009). Thus the efficient and effective

integration of internal and external resources underpin firm performance (Aoki 1990). In the automobile and computer industry, knowledge integration capability positively affects firm performance and performance improvement in the long-term (Iansiti and Clark 1994).

The concept of ‘dynamic managerial capabilities,’ highlights the importance of managers’ strategic decisions to ‘build, integrate, and reconfigure organizational resources and competencies’ (Adner and Helfat 2003: 1012). Dimensions of dynamic managerial capabilities affect performance (e.g., Moliterno and Wiersema 2007; Adner and Helfat 2003). The impact of an entrepreneurial management style on performance is contingent on the extent of integration of organizational elements to support utilization of the asset base (Covin and Slevin 1988).

Productivity is improved and a firm is able to match its resource base to the demands of a changing business environment by actively and effectively implementing new organisational strategies and practices (Jantunen et al. 2005). If firms are to derive superior performance from DCs, their internal organisational structure must be aligned to the capacity of sensing and seizing external opportunities, and of appropriately reconfiguring their resource base (Wilden et al. 2013). Systematic reconfiguration of the resource base increases compatibility with the environment, and may lead to significant differentials in performance since such activities enable a less costly accumulation of knowledge, by the firm, on implementing change (Zott 2003). Therefore significant internal determinants of a firm’s international performance are its DCs that are aimed at effective reconfiguration of the resource base, and a productive, risk-taking and innovative strategic orientation of the firm (Jantunen et al. 2005).

Based on the foregoing arguments, the hypothesis below is developed:

H₁: Strategic leadership positively and significantly influences firm performance.

Managers may not successfully address opportunities or potential innovations even when these are recognised, since enterprises tend to frame new problems in ways that are consistent with their current knowledge base, assets, and established problem-solving and business model (Duh 2013). Further, with respect to sensing, there is potential difficulty for senior management, engendered by managers’ more sensitivity to threats than opportunities (O’Reilly and Tushman 2008). Therefore, as a service firm’s performance is positively

impacted by most EO dimensions,⁵⁹ it is important for it⁶⁰ to be developed among owners of SMEs service firms (Lee and Lim 2009). Such organisational strategy making processes that underpin entrepreneurial decisions (Lumpkin and Dess 1996), are aimed at sustaining corporate vision and creating competitive advantage (Rauch et al. 2009).

The strategic design choice of a service firm, for instance, is: a function of its competitive priorities vis-à-vis competitors, the target market it intends to pursue, as well as the service concept required (Roth and Menor 2003). The expected performance outcomes of the realized service delivery system are competitive capabilities, and realized service concept; however, gaps often arise between the actual execution and either the target market expectations or service concept, requiring managers to continually assess and renew the realized service delivery system as necessary (Roth and Menor 2003). Thus for a firm to survive in the current global, complex, and rapidly changing environment, it needs to be entrepreneurial, take risks, and be innovative in ideas, products, processes, and services (Huang and Wang 2011; Fairoz, Hirobumi, and Tanak 2010). With such persistent and rapid changes in the market (Prajogo and Ahmed 2006), competitive advantage may be attained by pursuing marketing and entrepreneurial activities (Chapman and Hyland 2004).

Entrepreneurial thinking and functioning are critical in a dynamic environment, considering that long-term development and success of an organisation is only possible with entrepreneurial initiatives developed at all levels of the organisation, as well as persistent determination to achieve very demanding organisational goals (Duh 2013). Entrepreneurial orientation (and market orientation) underscores the need to proactively scan the environment for information such as competitors' strategy, to enable the firm to promptly respond to customer demands (Huang and Wang 2011). It is important, thus, for senior management to develop the facilitators of DCs within the firm (Duh 2013) as such capabilities are fundamental to achieving long-term organisational objectives.

DCs create the necessary potential for evolving business advisory services (Doving and Gooderham 2008), and strategic decision making that underscores senior management's desire to pursue opportunities for the development of such services (Grant 1996). Such

⁵⁹ Many researchers indicate three EO dimensions: innovativeness, proactiveness, and risk-taking (Rauch et al. 2009). In addition to these three dimensions, other researchers have included autonomy and aggressiveness (e.g. Lumpkin and Dess 1996).

⁶⁰ Entrepreneurial orientation (EO)

strategic decisions may involve both strategic positioning and strategic intent (Doving and Gooderham 2008).

The range of services developed and provided by an accountancy practice is likely influenced by the types of clients (and market) the accountancy practice targets (Lowendahl, Revang, and Fosstenlokken 2001). Therefore, accountancy practices that have positioned themselves to provide standard accountancy services to clients who are relatively more disposed to purchasing different types of specialized business services are more able to diversify into advisory services, since such services could be offered to same clients (Doving and Gooderham 2008).

Firms have the ability to be entrepreneurial, and to achieve and maintain competitive advantage through innovation and learning, supported by the existence of important internal/external attributes that enable it to change, renew and reinvent itself (Garcia-Morales et al. 2006). Therefore, the strategic factors that affect OL/OI and lead to improved organizational performance should be identified and properly managed by senior management. Furthermore, firms that are highly entrepreneurial oriented create an environment with perceived employee-employer mutual benefits, thus enabling learning and innovation (Huang and Wang 2011). Moreover, developing OL/OI variables⁶¹ is a critical role of senior management (Garcia-Morales et al. 2006), whose perception of the firm's competitive environment and of its resources and capabilities influences the development of such OL/OI and subsequent improved firm performance (Porac and Thomas 1990).

Transformational (supportive) leadership that addresses the intellectual-capital, promotes OL/OI, allows the organization to learn and innovate through experimentation-dialogue-personal mastery-organizational knowledge (Senge et al. 1994), by creating conditions that encourage the abilities/practices needed to promote OI (Van de Ven 1986). Such conditions include: bringing together teams of innovative people, promoting mutual trust, risk taking, and shared vision among the organization members and minimizing internal communication costs (Dess and Picken 2000; Senge 1990).

The unique skills, knowledge and experience that professional services firms leverage in order to provide expertise and efficient solutions to clients, are factors that distinguish these

⁶¹ Garcia-Morales, Llorens-Montes, and Verdu-Jover (2006) posit that this could be done by determining the types of behaviour that are expected and supported.

firms (Roth and Menor 2003). Because professionals in knowledge-intensive firms often generate ad hoc and highly customised solutions for clients (Miles 2008), with such innovations typically relying on the professional skills of employees, the staffing strategy (recruitment of quality of staff and staff development/training) is likely to have a positive impact on service innovation strategy of small and medium CPA Firms (Yeh and Sur 2015). As such, small accountancy practices must have routines and systems in place that ensure the regular development of their human capital (Doving and Gooderham 2008).

In dynamic environments with shortened business model and product lifecycles, firms should adopt an EO, and should constantly look for new opportunities as there is uncertainty of future profits from existing operations (Rauch et al. 2009). Also, improved performance may result from a firm's endeavours to anticipate demand and aggressively position new product/service offerings (Ireland, Hitt, and Sirmon 2003). Although there is considerable variation in the magnitude of EO-performance correlation, conceptual arguments show that pursuit of EO results in higher firm performance (Rauch et al. 2009).

To extend and broaden the scope of advisory services provided by a small accounting practice is a long-term endeavour that requires purposeful and long-term investment in routines, systems, and processes, and may involve strategically anchored internal development routines and systems, or the development of external alliances with complementary service providers (Doving and Gooderham 2008). Such long-term decisions are strategic, require entrepreneurial orientation, and are the responsibility of top management of the firm. Even when a firm possesses sophisticated knowledge and technology, it would not survive if it is inward-looking and unable to proactively address changes in the environment (Garcia-Morales et al. 2006). Thus the manager's proactive perception of the state of the environment is important in determining the firm's innovation and learning activities (Garcia-Morales et al. 2006) that are vital in proactively addressing environmental dynamism.

The configuration and reconfiguration of resources, internally and externally, include an assessment by the firm of the need for timing and nature of alliances with other organizations (Teece 2012). This assessment includes consideration of the economic benefits that could be accrued through cooperation (Wu 2006). As spin-offs may encounter difficulties in market sensing and market intelligence, especially in dealing with foreign markets (due to their technological orientation), they need reliable market partners to develop presence and reputation in these critical stages of the business (Walter, Auer, and Ritter 2006). Cooperative

methods such as strategic alliances to gain the requisite complementary resources and capabilities from support organisations are often used by enterprises that lack sufficient resources to thrive (Bantham, Celuch, and Kasouf 2003; Johnson and Sohi 2003)

Cognizance of the strategic role of senior management and the impact of senior managerial decisions on developing and orchestrating the firm's DCs, it is submitted in this research that strategic leadership is responsible for, and positively influences the firm's organisational learning, alliances & networks, ambidexterity, and innovativeness. This is hypothesised as follows:

H₂: Strategic leadership positively and significantly influences the firm's higher-order DCs.

This hypothesis is broken down as follows:

H_{2a}: Strategic leadership positively and significantly influences organisational learning.

H_{2b}: Strategic leadership positively and significantly influences corporate alliances & network.

H_{2c}: Strategic leadership positively and significantly influences ambidexterity of the firm.

H_{2d}: Strategic leadership positively and significantly influences firm innovativeness.

3.2.2 Organisational Learning

A firm's learning orientation must be aligned to its design, strategy, structure, and strategic HRM (Huang and Wang 2011), considering that when HRM practices are coherent with corporate strategy, individual-level learning and innovation development within a firm are promoted (Saru 2007). This implies that organisational learning impacts on individuals as well as on corporate performance (Bapuji and Crossan 2004).

A firm's knowledge in collecting, sharing, and disseminating market and entrepreneurial information, to effectively become market-driven and entrepreneurial-driven, is underpinned by organisational learning (Huang and Wang 2011). Such market-oriented approach positively influences a firm's economic and non-economic performance (Jimenez-Jimenez and Cegarra-Navarro 2007; Santos-Vijande et al. 2005).

The intellectual capital embedded in an organisation's staff and systems is critically important (Oliveira et al. 2002). DCs may involve the creation of new knowledge or the divestment of

certain activities that are deemed unprofitable (Laperche and Liu 2013). Knowledge is the most critical resource of the firm (Grant 1996), with superior performance and sustained competitive advantage determined mainly by differences in knowledge resources and capabilities between firms (Eisenhardt and Santos 2002). The knowledge, skills, and abilities embodied in people⁶² (Coff 2002), including the experiences, education, and training of managers, are deemed to be fundamental in driving corporate strategy and performance (Hambrick and Mason 1984).

External learning through strategic cooperative alliance or internal learning through human resource development programs is also crucial for improving firm competence (Fang and Zou 2010; Mody 1993). A firm's resources, different from its capabilities, include its core resources and the complementary resources provided by entities it cooperates with (Wu 2006). A firm's capabilities are its ability to deploy resources and utilize organizational procedures to integrate them so as to achieve the desired results (Makadok 2001; Amit and Schoemaker 1993).

Based on the arguments, the hypothesis below is developed:

H₃: There is a positive and significant relationship between organisational learning and firm performance.

Considering the hypothesised positive and significant influence of strategic leadership on organisational learning, the hypothesis below is also developed:

H₄: Organisational learning mediates the relationship between strategic leadership and firm performance.

Knowledge and learning are important for sensing and seizing opportunities and intangible assets that are critical to enterprise success (Teece 2007). Teece, Pisano, and Shuen (1997: 520) posit that 'perhaps, even more important than integration is learning. Learning is a process by which repetition and experimentation enables tasks to be performed better and quicker. In the context of the firm ... learning involves organisational as well as individual skills Learning requires common codes of communication and coordinated search procedures.' Also, the creation of learning, knowledge-sharing, and knowledge-integrating

⁶² These are collectively known as a firm's human capital.

procedures facilitates ambidexterity, an essential (micro) foundation of DCs (O'Reilly and Tushman 2008). Furthermore, as a firm's learning capabilities may enable environmental adaptation by facilitating organisational learning and effective innovativeness, the importance of learning in improving organisational effectiveness and performance is a key organisational competency and practice (Huang and Wang 2011).

As the co-evolution of past experiences, knowledge articulation and knowledge codification processes (Zollo and Winter 2002) constitute organisational learning which results in DCs (Eisenhardt and Martin 2000), the firm's critical capabilities include its ability to learn and to change (Barney, Wright, and Ketchen 2001). Learning orientation facilitates innovation efficiency - the basis for attaining competitive advantage (Lopez, Peon, and Ordas 2005), and is fundamental in achieving strategic organisational renewal in an organization (Crossan and Berdrow 2003).

Organisational learning enhances the learning of the environment (including the market), facilitates a firm's assimilation and interpretation of new market and entrepreneurial information, and could represent a developmental approach that supports the move from innovative culture to innovative performance (Huang and Wang 2011).

Based on the foregoing discussion, the following hypothesis is developed:

H₅: Organisational learning positively and significantly influences its ambidexterity.

3.2.3 Corporate Alliances and Networks

Entrepreneurs employ necessary resources through networks as the basis for generation and promotion of DCs (Jiao, Alon, and Cui 2011). Many DCs focus on the reconfiguration of resources within the firm, while others are geared to the development and exploitation of interfirm networks and alliances that give the firm access to the resources and capabilities of firms in the network/alliance (Koka and Prescott 2002; Eisenhardt and Martin 2000; Gulati 1999; Lane and Lubatkin 1998; Powell, Koput, and Smith-Doerr 1996; Iansiti and Clark 1994). Generally, resources from networks through learning mechanisms, are transferred, disseminated, reproduced internally within the organization, as there is an increased

understanding of the environment, increased organisational and technical flexibility which, in turn, facilitate the development of DCs (Jiao, Alon, and Cui 2011).

Alliances are important instruments for augmenting a firm's asset base as they grant access to resources that are external to the firm's boundaries (Das and Teng 2000). Similarly, in their extensive study of the pharmaceutical industry, Henderson and Cockburn (1994) argue that external linkages are crucial to effective knowledge creation. Moreover, it is argued that small accountancy practices should have processes for developing alliances with a range of other services providers (Doving and Gooderham 2008) including banks, law firms, and IT firms. As a firm's alliance management is strategically critical in the organisation of its resource base (Schilke and Goerzen 2010), alliance management capability is a distinct dynamic capability (Schilke and Goerzen 2010; Rothaermel and Deeds 2006; Zollo and Winter 2002; Eisenhardt and Martin 2000).

Using empirical evidence from Germany and the Netherlands (Van de Vrande et al. 2009; Lichtenthaler 2008) posit that SMEs in industrial or service sectors are increasingly open to cooperation, in search for external sources of knowledge. Collaboration of European innovating SMEs is a driving force of the EU innovation performance (European Commission 2013). Also, globalization is identified as another force that pushes SMEs to transform their business models in order to increase their innovativeness (Narula 2004), which, in certain instances, involve collaboration between small and large companies (Laperche and Liu 2013).

The quality and range of a small accountancy practice's external network is critical in obtaining the resources it lacks, considering the limitation to the number of competencies that can be developed internally as a result of its size (Doving and Gooderham 2008). In dynamic environments, as collaborative relationship with a single external firm will not be sufficient (Doving and Gooderham 2008), the establishment and maintenance of a heterogeneous inter-organisational network that grants access to diverse capabilities, resources, and information could serve as a proxy for a dynamic capability (McEvily and Zaheer 1999). External linkages such as significant alliance relationships are essential for effective knowledge creation, and led to superior R&D performance within biotech firms (Powell, Koput, and Smith-Doerr 1996). Such external linkages often take various forms including informal relationships and formal alliances (Eisenhardt and Martin 2000). Therefore, competencies that are relevant to developing advisory services could be leveraged by SMPs from such external networks (Storey 1994; Birley and Westhead 1992). Some accounting firms may seek to

develop strategic alliances with other business support services providers (Blackburn, Carey, and Tanewski 2010). Street and Cameron (2007) posit that the network of external relationships provide small firms with both tangible and intangible benefits.

Firm innovativeness may result from the possession of internal characteristics⁶³ that gives it an innovative edge over competitors, and/or from occupying a preferred network position that enables access to information required to foster creativity and innovativeness (Zaheer and Bell 2005). For instance, the ability of spin-offs to purposefully establish important connections with actors including suppliers, customers, research institutions and legal authorities, influence their existence and growth (Walter, Auer, and Ritter 2006). Networks play a key role in transmitting knowledge resources and innovativeness (Rogers 1995) which are important to firm performance (Mowery, Oxley, and Silverman 1996).

From the aforementioned arguments, it is deduced that organisational learning, ambidexterity and firm innovativeness are impacted by the extent of the alliances & networks the firm engages in. Therefore the following hypotheses are developed:

H₆: The existence of alliances & networks positively and significantly influences organisational learning.

H₇: The existence of alliances & networks positively and significantly influences the firm's ambidexterity.

H₈: The existence of alliances & networks positively and significantly influences firm innovativeness.

3.2.4 Organisational Ambidexterity [Ambidextrous Orientation]

For a firm to succeed, it should combine the apparently incompatible tasks of exploitation and exploration (Prange and Verier 2011). As there is a strong negative direct effect of success traps on DCs and firm performance, the strategic renewal and creation of its resources and capabilities in the light of environmental dynamism requires the firm being trapped in its own success (Wang, Senaratne, and Rafiq 2015). To avoid success traps, the firm should adopt a

⁶³ These characteristics include communication structures, culture, and a solid R&D set-up (Zaheer and Bell 2005).

balanced approach to explorative and exploitative learning, rather than focus on excessive exploitative learning (Wang, Senaratne, and Rafiq 2015; Gibson and Birkinshaw 2004).

An ambidextrous orientation is central to enhancing returns for the firm relative to its competitors, considering that the firm is better positioned to attain and sustain its competitive advantage, and to protect future cash flows from external selection pressures (Lubatkin et al. 2006).

Based on the preceding arguments, the hypotheses below are developed:

H₉: SMP ambidexterity positively and significantly influences its performance.

Senior management team's behavioural integration has a causally indirect influence on organizational outcomes as it is a salient factor in achieving an ambidextrous orientation in SMEs, where simultaneously engaging in exploitation and exploration (ambidexterity) impacts on business performance (Lubatkin et al. 2006). Therefore:

H₁₀: Ambidexterity mediates the relationship between strategic leadership and firm performance.

Similarly, considering the expected significant influence of organisational learning on the ambidexterity, it can be argued that organisational learning also has an indirect influence on performance via ambidexterity. Therefore the hypothesis:

H₁₁: The relationship between organisational learning and performance is mediated by ambidexterity.

Ambidexterity is an essential capacity to build competitive advantages over competitors in the context of growing open innovation, where a firm builds up its knowledge-capital through dynamic knowledge management of its 'knowledge capacities' (Laperche and Liu 2013: 4). These capacities are the firm's critical capabilities⁶⁴ (Lichtenthaler and Lichtenthaler 2010), that are linked by knowledge exploration, retention and exploitation processes for managing internal and external knowledge (Laperche and Liu 2013). Such capabilities account for

⁶⁴ Lichtenthaler and Lichtenthaler (2010) argue that these capabilities include inventive, absorptive, transformative, connective, innovative, and desorptive capacities.

variation in alliance strategies, knowledge trajectories, organisational configurations and innovation performance amongst enterprises (Laperche and Liu 2013).

Managers can exhibit (to various extent) the capacity to engage in both exploitation and exploration activities; however, this varies within and across contexts, due to both personal characteristics and the organizational contexts faced by the manager (Raisch et al. 2009). Organizational ambidexterity is also influenced by the cumulative ability of its individual staff to engage in exploration and exploitation, which could emerge from continuous alignment of activities throughout the multiple phases of technological change (Raisch et al. 2009).

Senior management can use economic, structural, social, and cognitive influences to enable middle managers to properly manage the ambidextrous activities of the firm (Raisch et al. 2009). Engaging in either an exploitative orientation or an exploratory orientation has adaptive limitation, as well as indeterminate link between performance and each (Lubatkin et al. 2006). Thus, a firm's competitiveness lies in its ability to use its ambidextrous DCs (engage in both orientations) in order to build on its current competencies,⁶⁵ build new innovative capabilities,⁶⁶ such that performance of each orientation is positively impacted by the other (Eisenhardt and Martin 2000; Teece, Pisano, and Shuen 1997).

From the above, it could be argued that innovativeness is influenced by the firm's ambidexterity. Therefore, it is hypothesised as follows:

H₁₂: Organisational ambidexterity positively and significantly influences SMP innovativeness.

3.2.5 Innovativeness

The value of DCs lies in the resource configurations that they create or enhance, which in turn enable the firm to pursue opportunities in new, unpredictable markets (Doving and Gooderham 2008). Innovating firms develop their own unique knowledge and resultant capabilities that engender organizational performance (Knight and Cavusgil 2004). Innovation, a key mechanism for organisational growth and renewal, does not necessarily

⁶⁵ Exploitation orientation

⁶⁶ Exploration orientation

require specific focus on technology, as it may relate to the development of new products, new processes, systems or even business models (Lawson and Samson 2001).

Innovation pervades all aspects of an organisation's existence, from the core value system to the measures and behaviours that are manifested on a daily basis (Lawson and Samson 2001). The ability to develop unique products derives from the innovative and knowledge-intensive capabilities of firms, which enable them to create distinctive products - a differentiation strategy involving creation of customer loyalty by uniquely meeting their particular needs (Knight and Cavusgil 2004). Furthermore, while innovative activities in larger, long-established firms are usually hindered by substantial bureaucratization, the more flexible, less bureaucratic nature of small and young firms provide internal conditions that encourage innovative culture (e.g., Lewin and Massini 2004; Penrose 1959). Such innovative culture facilitates the acquisition of knowledge, leading to capabilities that drive organisational performance (Knight and Cavusgil 2004). Thus, given that competencies relevant to the production and supply of traditional accounting services are standardised, and incentives to diversify are uniform across accountancy practices, Doving and Gooderham (2008) contend that change in product range results from possessing relevant DCs.

The innovation capability influences the configuration of newstream and mainstream activities leading to continuous product, process and systems innovation, with the possession of stronger innovation capability resulting in a more effective innovation performance (Lawson and Samson 2001). Empirical evidence shows a positive relationship between innovation performance and enhanced firm performance (Lawson and Samson 2001), with innovative firms being more profitable and having relative a higher capital market valuation relative to less innovative firms (Jonash and Sommerlatte 1999; Roberts 1999).

Innovation is an integral part of the service industry (Yeh and Sur 2015), as innovativeness by service businesses is not dependent solely on industrial innovation (Hipp and Grupp 2005). New or substantially modified service delivery processes or service concept that deliver new or improved solutions to a problem in order to add value to clients, are service innovations (Tidd and Hull 2003). Firms involved in the provision of services engage in service innovation so as to maintain or improve their competitive position (Yeh and Sur 2015). By bringing new products/services to the market while improving existing ones, the firm is placed in a dynamic and sustainable strategic position which makes it a constantly moving target to competitors (Kiernan 1996).

Based on the preceding arguments, I hypothesize as follows:

H₁₃: There is a positive and significant influence of firm innovativeness on its performance.

Considering the hypothesised significant influence of strategic leadership on innovativeness, and of ambidexterity on innovativeness, I argue that both strategic leadership and ambidexterity have indirect effects on performance via innovativeness. Therefore the following hypotheses are presented:

H₁₄: Innovativeness mediates the relationship between strategic leadership and performance.

H₁₅: The relationship between ambidexterity and performance is mediated by innovativeness.

3.2.6 Firm (SMP) Age

The learning that is necessary for effective use of DCs is impeded by inertia, with greater impact of inertia in older firms than younger firms (Zahra, Neubaum, and El-Hagrassey 2002). DCs will result in increased learning with greater impact on future performance in younger firms as changes in operational capabilities are infrequent in such firms (Zollo and Winter 2002).

In younger firms, employees are motivated about the successful adaptation of the firm to environmental changes since they are more likely to have either a financial stake (equity) in the business or aspire to achieve increased management experience as the firm expands (Arend 2014). Also, because of lesser friction and politics in young firms, there is greater tolerance for employees' adaptation in younger than older firms (Arend 2014), with employees likely to feel a greater sense of responsibility.

Furthermore, because its operational capabilities are new, a young firm may not have established a set way by which they are altered, in addition to the fact that newer firms may not be able to ascertain the benefits of employing a highly routinized method of change for its operational capabilities (Winter 2003).

In stable environments, older firms can generate efficiencies from their valuable resources, established structures and routines, but because these structures may lead to inertia, their ability to quickly adapt to rapidly changing environment is reduced (Battisti and Deakins 2017). Although younger firms may not have lesser amount of valuable resources, the lack of very established structures and routines gives them the ability of rapid adaptation in highly volatile environments (Battisti and Deakins 2017). In addition, there is greater motivation and opportunity to use DCs at younger SMEs (Arend 2014).

Therefore firm age has control effects on the relationship between: (i) DCs and firm performance and; (ii) DCs and DCs.

3.2.7 Firm (SMP) Size

Firm size refers here to the total number of employees, and has been linked to inertia, difficulty to process information relevant to resource changes, and to lack of adaptability to changes in the state of resources (Hannan and Freeman 1989). Furthermore, empirical research suggests that firm size could impact on corporate performance (Haveman 1993). For instance, firm size impacts on the link between EO and performance, with EO's effect on performance being greater in small organisations (Rauch et al. 2009). As smaller organisations are more flexible, and senior management can exert direct influence without need for middle managers' involvement, they can quickly adapt to take advantage of new opportunities resulting from environmental changes (Rauch et al. 2009). Furthermore, Blackburn and Jarvis (2010) argue that an SMP may be prevented, by its size, from providing a more diversified range of services from within the firm. Therefore, adverse environmental changes in the locality would have a greater impact on a small (local) firm than a bigger firm that operates from multiple location or have clients that are not only local (Battisti and Deakins 2017).

Based on the above, firm size has a control effect on the relationship between DCs and performance and on the relationship between DCs. Firm size is therefore considered a control variable in this study.

3.2.8 Environmental Dynamism

Environmental turbulence, the frequency and amplitude of change in the environment and the general conditions of uncertainty (Duncan 1972), which moderates the effect of DCs on operational capabilities (Pavlou and El Sawy 2011), consists of two primary sources: (i) market turbulence (uncertainty in market demands and competitor moves); and (ii) technological turbulence (frequency of technical breakthroughs) in NPD (Jap 2001).

Because dynamic environments create new opportunities (Sull 2009) as well as a gap between existing and ideal operational capabilities (Fredrickson and Mitchell 1984), firms are incentivized to reconfigure current operational capabilities by deploying DCs (whose values are enhanced), in order to pursue such new opportunities and build new products that better match the environment (Pavlou and El Sawy 2011). Therefore, there is a more likelihood of reconfiguration of operational capabilities in turbulent environments (Rindova and Kotha 2001), considering the great value in the ability to reconfigure resources in such environments (Teece, Pisano, and Shuen 1997).

Technological turbulence represents an important element of market dynamics (e.g., Jaworski and Kohli 1993), but might not affect the strategic orientation-adaptive capability where technological changes are high overall and do not vary significantly across different industries (Zhou and Li 2010). A turbulent external environment, compounded by internal organizational change, is likely to have damaging effects on public service performance (Boyne and Meier 2009). The level of achievement of corporate objectives can be improved to withstand environmental dynamism and uncertainties if a firm implements new technology and has an organisational structure that integrates its technical and administrative changes (Roessner 1977).

Although achievement of process efficiencies in product development is partially facilitated by operational capabilities (Pavlou and El sawy 2011), changes in market demand, technologies and product substitutes in turbulent environments diminish the potential value of a firm's existing products (Danneels 2002). Therefore, the positive effect of operational capabilities on performance is likely to be negatively moderated by environmental turbulence (e.g. Schreyogg and Kliesch-Eberl 2007; Pavlou and El Sawy 2006; Eisenhardt and Martin 2000), especially when inertia and unwillingness to reconfigure operational capabilities result

in rigidities (Leonard-Barton 1992), or when efficiency of such capabilities are disrupted by frequent reconfigurations (Zammuto 1988).

From the above, I argue that environmental dynamism has control effects on the relationship between DCs and performance as well as on the relationship between DCs.

3.3 CONCEPTUAL RESEARCH MODEL

3.3.1 Model Constructs

In the preceding sections, the theoretical arguments were analysed to establish the hypothesized relationships between DCs constructs and firm performance as well as the relationships between DCs constructs. On the basis of the developed hypotheses, the conceptual research model is produced. This is shown in figure 3.1 below.

Fig 3.1: Conceptual Research Model

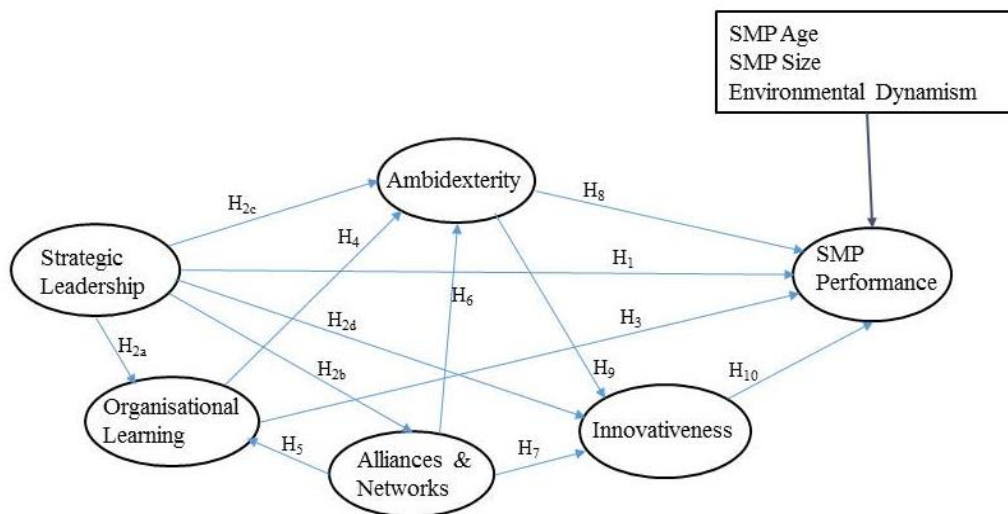


Figure 3. 1: Conceptual Research Model

Source: Author

The research model in figure 3.1 above shows the relationships between the DCs constructs and SMP performance as well as between DCs constructs. The model also illustrates the effects of control variables on the relationship between DCs and firm performance.

3.3.2 Variables

From the developed hypotheses, the independent and dependent variables could be identified. The control variables could also be identified. The relationships amongst the variables have been schematized in figure 3.2 below.

Fig 3.2: Relationship between Research Model Variables

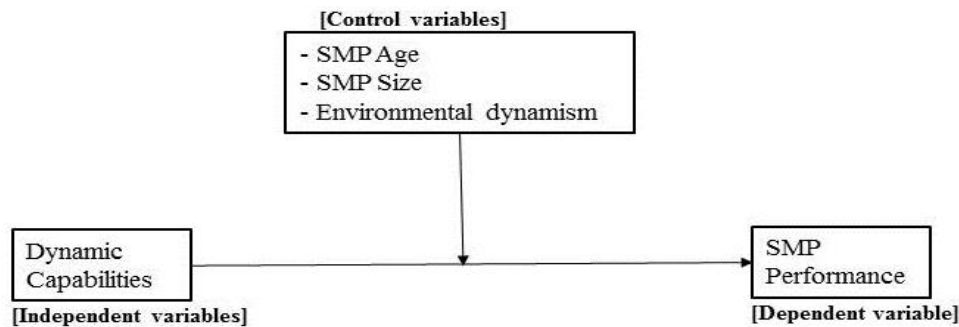


Figure 3.2: Relationship between conceptual research model variables

The relationship between the independent, endogenous, control and dependent variables contained in the research model are shown above. While the exogenous independent variable is the strategic leadership DCs construct, the endogenous independent variables are the following DCs constructs: organisational learning, alliances & networks, ambidexterity, and innovativeness. The control variables are SMP age, SMP size, and environmental dynamism, while the dependent variable is SMP performance.

3.4 HOW THE RESEARCH QUESTIONS HAVE BEEN COVERED

No	Research Question	Covered By [Hypotheses, H]
i	Is firm performance influenced by DCs?	H ₁ , H ₃ , H ₉ , H ₁₃
ii	Is there a relationship between DCs?	H _{2a} , H _{2b} , H _{2c} , H _{2d} , H ₅ , H ₆ , H ₇ , H ₈ , H ₁₂
iii	Is the direct relationship between DCs and firm performance mediated by certain DCs?	H ₄ , H ₁₀ , H ₁₁ , H ₁₄ , H ₁₅

Table 3.1: Coverage of the Research Questions

3.5 CHAPTER SUMMARY

The hypotheses relating to the study have been developed, and the conceptual research model in which the relevant DCs constructs are conceptualised also developed. In constructing the hypotheses and conceptual model, the researcher built on the concepts and contextual routines that underlie the DCs theory. This approach enabled the development of a theory-based, multidimensional model of the foci constructs of DCs, from which a comprehensive measurement instrument is derived.

The conceptual model set the basis for investigating (and testing) the relationship between DCs constructs and relative firm (SMP) performance. In order to carry out such investigation, the constructs, being latent variables, have to be operationalised and measurement instruments determined, to render them testable. These, together with the methodology adopted in the study, and the collection of data are discussed in Chapter 4.

CHAPTER 4: METHODOLOGY & DATA COLLECTION

4.1 INTRODUCTION

In the previous chapter, the testable hypotheses and conceptual research model were developed. This chapter discusses the research approach and specific research method and techniques employed in the study. It contextualises the various philosophical positions and assumptions in research in social science, and indicates the researcher's philosophical commitment as well as the methodology applied. The adoption of a mixed research methods is presented and reasons for its adoption explained.

Furthermore, with the operationalization of the constructs, the survey instrument is developed, pretested, piloted, and deployed to sample potential respondents for primary data collection. In addition, qualitative data is also collected through semi-structured interviews. The chapter is structured as follows: research approach; research strategy; research techniques; time horizon and; analysis of data; operationalization of constructs, development of survey instrument, deployment of survey questionnaire, coding and validation of data, collection of qualitative data via semi-structured interviews, and summary.

4.2 RESEARCH APPROACH

4.2.1 Research Philosophy - Basis of methodological considerations

The research methodology adopted in this study is influenced by the researcher's perception of the nature of business activities (i.e. competitive forces) within the accountancy practice industry, particularly in relation to SMPs. It is also influenced by how knowledge of such activities could be obtained, and whether knowledge about these is socially constructed and/or could be influenced by this researcher. These influences are shaped by the researcher's philosophical assumptions vis-à-vis SMPs which are the objects of the study.

Research philosophy relates to the development of knowledge, the nature of knowledge (Saunders, Lewis, and Thornhill 2012), and reality of knowledge (Uddin and Hamiduzzaman 2009). The two components of research philosophy are ontology and epistemology. It is argued that while ontology is concerned with the nature of reality – what reality is,

epistemology is about what, in a field of study, constitutes acceptable knowledge (Neuman 2013; Saunders, Lewis, and Thornhill 2012). Thus, the researcher's philosophical position sets the foundation for the choice of research methodology pursued in this study.

4.2.1.1 Ontological position

All accountancy firms, including SMPs, as profit-making business enterprises, will have more or less similar objectives. Although some accountancy firms may be less ambitious to maximise profits, outperform other firms in the industry, or expand into new markets, these less ambitious practices would still aim to be profitable and continue in business, each, as a going concern. Thus, the profit motive of SMPs and the desire to stay in business make these firms independent of those they employ. This implies that variation of the principal business objectives of an SMP will be limited, notwithstanding a change in its key staff. Yet this variation in business objectives could explain the drive by SMPs to maximise or not to maximise profits, and/or the drive to expand or not to expand the business.⁶⁷ This variation could also be reflected in the objectives set for the firm.⁶⁸ These are important because such differences and preferences are the result of management's interpretation of the circumstances surrounding the firm.

In regard to the above, objectivism portrays the position that the real existence of social entities is independent of social actors concerned with their existence, while subjectivism holds that social phenomena are created from the perceptions and consequent actions of those social actors concerned with their existence (Saunders, Lewis, and Thornhill 2012).⁶⁹ Also, as objects that are the subject of research exist independently of the researcher (Pring 2015), as is the case of SMPs being investigated in this project, the data collected are more objective considering they are far less open to bias. Further, it is pointed out that the researcher's perceptions of how things really are and how they really work form the basis of his/her ontological stance (Scotland 2012).

⁶⁷ Such expansion could include growing the size of the business by increasing its client base and/or by entering into new markets (location) and/or by increasing the range of services the firm provides.

⁶⁸ For example: the target growth rate set by management or the decision of whether or not to be involved in community projects as part of Corporate Social Responsibility (CSR).

⁶⁹ For instance, with the assumption that management is similar in all organisations, objectivism underscores management's structural aspects, noting that although management operates under different structures or objectives in various organisations, managerial functions are similar across firms (Saunders, Lewis, and Thornhill 2012).

The two broad and contrasting ontological positions – objectivist and subjectivist knowledge (Neuman 2013) - are likely to be accepted by the research community as producing valid knowledge (Saunders, Lewis, and Thornhill 2012). Objectivism is the ontological position likely to be adopted in a research where the researcher is operating with the functionalist paradigm, with key assumption that organisations are rational entities, in which rational explanations offer solutions to rational problems (Saunders, Lewis, and Thornhill 2012). On the other hand, subjectivism is often associated with constructionism, or social constructionism (Saunders, Lewis, and Thornhill 2012). It views reality as being socially constructed (Neuman 2013), or as a product of social actors' perceptions and actions, and follows from the interpretivist philosophy that it is necessary to explore the subjective meanings motivating the actions of social actors in order for the researcher to be able to understand these actions (Saunders, Lewis, and Thornhill 2012).

4.2.1.2 Epistemological stance

Epistemologically, SMPs are assumed to be external to the researcher. Considering this assumption in the current study, therefore, the researcher takes the view that the relevant latent constructs illustrated in conceptual research model⁷⁰ and operationalised,⁷¹ could objectively be measured. Such measurement is made possible by analysing data relating to the measurement items, directly and independently obtained from respondents. That said, the need to understand the drivers of business decisions requires not only an in depth understanding of the motivation of management and other actors within the SMP, but also an interpretation by the researcher of such motivation. Epistemology concerns the nature and forms of knowledge (Cohen, Manion, and Morrison 2011), with its assumptions concerned about how knowledge can be created, acquired and communicated (Scotland 2012) or the nature of the relationship between the would-be knower and what can be known (Guba and Lincoln 1994). Positivism and interpretivism (constructivism) are the two broad epistemological positions (Tuli 2010). The epistemological paradigm of positivism is based on the core argument that the social world is external to the researcher, and its properties can be measured directly through observation (Gray 2013).

⁷⁰ See Chapter 4

⁷¹ See Chapter 6

It is posited that epistemological consideration should be the starting point in selecting the research approach and strategies, as the research approach and research methods used by the researcher are influenced by his/her perception of the existence of [objective and] measureable reality, or whether the real world cannot be objectively measured (Gray 2013). Although there is a number of theoretical perspectives and methodologies in extant literature, with the terminology applied to them often inconsistent (or contradictory), an interrelationship exists between the researcher's theoretical stance, the methodology and methods used, and the researcher's epistemological view (Crotty 1998).

While the positivist epistemology is one of objectivism which requires impartiality in discovering absolute knowledge about an objective reality, the ontological position of positivism is realism (Scotland 2012). This is the view that objects have an existence independent of the knower (Cohen, Manion, and Morrison 2011), as the researched is independent from the researcher whose goal is to acquire meaning that solely resides in objects (Scotland 2012).

In the context of the current study, importantly, the researcher used DCs theory to develop testable hypotheses. Also, the research aimed to collect relevant quantitative data, used to confirm or refute the hypotheses and, thereby, answer the research questions. Such data could only be obtained from the foci objects of the study – the SMPs – which are independent of the researcher. Mertens (2005) posits that theory forms the basis for the establishment of relationships between or among constructs. In addition, positivism maintains that objective reality is observed by the researcher (Mack 2010). This requires the researcher to be (deemed to be), as far as possible, external to the process of data collection such that little can be done to alter the substance of the data collected. Moreover, to facilitate replication, it is likely that the positivist researcher will adopt a highly structured methodology (Gill and Johnson 2010), with emphasis on quantifiable observations that lend themselves to statistical analysis (Saunders, Lewis, and Thornhill 2012).

Where a research reflects the philosophy of positivism, the philosophical stance of the natural scientist is likely to be adopted in the investigation, resulting in the production of credible data from the phenomenon observed. Although a positivist strategy to collect relevant data must not necessarily start with existing theory, such theory is likely to be used to develop hypotheses to be tested and confirmed, in whole or part, or refuted, leading to the further development of theory which may then be tested by further research (Gray 2013; Saunders,

Lewis, and Thornhill 2012). This approach often results in a tailored research design. Furthermore, to elaborate on the results of hypotheses tests, and enhance understanding, some qualitative data would also have to be collected on the DCs constructs through semi-structured interviews.

The interpretive epistemology suggests the need for researcher to comprehend the differences between humans as social actors. This stems from two streams of interpretivism: 1) Phenomenology – how humans make use of the world around them; 2) Symbolic interactionism – continuous process of interpreting the social world with which we (as humans) interact (Gray 2013; Saunders, Lewis, and Thornhill 2012). Interpretive paradigm⁷² refers to how humans attempt to construct meaning of the world around them (Gray 2013; Mack 2010), and understand the fundamental meanings attached to organisational life (Gray 2013).

The role of paradigm is crucial to the choice of methodology (Mackenzie and Knipe 2006). The different ontological and epistemological premises contained in different paradigms are reflected in the choice of methodology and methods the researcher adopts (Scotland 2012; Denzin and Lincoln 2005), to gain insight into, and possible explanations to, the subject of investigation (Tuli 2010).

4.2.3 Research Approach adopted in this Study

In the preceding discussions, the researcher has established his ontological and epistemological positions in the context of the current study. Specifically, the researcher's view that the existence of SMPs is independent of those they employ indicates his ontological objectivist stance. Also, by taking the view of being external to the SMPs (the objects of the current research), and that hypotheses developed from theory, in this empirical investigation could be objectively tested and measured, the researcher expresses his position of epistemological positivism. Therefore, with these philosophical views of the researcher, a deductive approach was adopted in the study. Johnson and Onwuegbuzie (2004: 15) posit that 'differences in epistemological beliefs (such as a difference in beliefs about the appropriate logic of justification) should not prevent a qualitative researcher from utilizing data collection methods more typically associated with quantitative research, and vice versa.'

⁷² This is sometimes known as constructivism (Mack 2010).

4.3 RESEARCH STRATEGY

4.3.1 Overview

The methodological position of this study has been underlined by the philosophical arguments espoused in the preceding section. Research methodology is the strategy or plan of action that underpins the choice and use of particular methods (Crotty 1998), and is concerned with nature, type, and source of data, data collection and analysis (Scotland 2012). Put differently, methodology deals with how the required knowledge may be acquired (Tuli 2010), in order to solve the research question(s) (Guba and Lincoln 1994).

In planning the conduct of this project, the researcher considered whether a qualitative, quantitative, or mixed methods design would be employed. The choice of the research method deployed in this study was influenced by the research questions which the researcher sought to answer, as well as the researcher's perception of SMPs, individually and collectively. It was also influenced by the researcher's perception of his relationship with the SMPs, in addition to their interaction and relation with other elements in the macro economy, in the context of this empirical investigation. Creswell (2009) posits that the research design is based on bringing together the philosophical assumptions about research, the specific strategies of inquiry, research methods, the research problem or issue being studied, the personal experiences of the researcher, and the audience for whom the outcome of the research is intended. Also, all research falls along a continuum - quantitative research and qualitative research at opposite ends, with survey research in the middle (Krathwohl 1998).

The various applicable research methods are briefly outlined in the following subsections:

4.3.1.1 Quantitative Method

Quantitative research identifies with positivism which assumes that physical and social reality are independent of the observer (Gall, Gall, and Borg 1999), and is concerned with an objective reality (Krathwohl 1998) with the researcher being independent of that which is being researched (Creswell 2009). Generalisation, another characteristic of deduction, requires the selection of samples of sufficient numerical size, in order that regularities in

human social behaviour could be generalised statistically (Saunders, Lewis, and Thornhill 2012). In addition, the sample should be representative of the population which is the subject of the research. Thus, in the positivist paradigm, validity, reliability and objectivity are fundamental issues (Tuli 2010), as they, in addition to precision and generalisability, are used to assess the rigour of quantitative studies (Ulin, Robinson, and Tolley 2004). The strategies of enquiry used in quantitative research methods are experimental designs, and non-experimental designs such as surveys (Creswell 2009). See Table 5.1.

4.3.1.2 Qualitative Method

Qualitative research identifies with interpretivism which assumes that social reality is constructed by the participants in it and is continuously constructed in local situations (Gall, Gall, and Borg 1999). Individuals' perception of their world is important to the qualitative researcher (Krathwohl 1998), who also interacts with the subject of the research (Creswell 2009). Furthermore, qualitative researchers allow the questions to evolve as the subject of research becomes familiar (Krauss 2005).

The theoretical perspective of interpretivism indicates that the world is too complex for independent observations. Thus the researcher considers whether to measure and generalize to a larger population or to seek rich descriptions through the collection of qualitative data, since generalisability is less important than understanding the interactions between social actors (Gray 2013). In the interpretive paradigm, fundamental considerations for the outcome of qualitative research relate to trustworthiness (Tuli 2010; Lincoln and Guba 1985) and credibility (Tuli 2010). Inductive research approaches are rich in internal validity; however, because external validity is weak, the results lack generalisability. See Table 5.1.

4.3.1.3 Mixed Methods

Mixed methods research strategies involve the use of both quantitative and qualitative methods in the same study. Quantitative and qualitative research are distinct in the following: (1) explanation and understanding as the purpose of enquiry, (2) personal and impersonal role for the researcher, and (3) a distinction between knowledge discovered and knowledge constructed (Stake 1994). The three research design approaches (quantitative, qualitative, and

mixed models) are not discrete, as qualitative and quantitative approaches are not polar opposites or dichotomies; but are different ends on a continuum (Newman and Benz 1998). For instance, while mixed methods research is in the middle of this continuum, a study may be more quantitative than qualitative or vice versa (Creswell 2009).

Quantitative and qualitative approaches are considered complementary when combined in the same study, as each would constitute multiple instruments relevant to specific circumstances (Cornford and Smithson 2006). Considering there are limitations in the use of a single method, triangulation of data sources as a means of converging the quantitative and qualitative methods, could neutralise the inherent biases in each method (Creswell 2009), thereby increasing the creative potential of the research, its validity, as well as certainty of its findings (Mingers 2001; Eisenhardt 1989).

Table 4.1: Alternative strategies of enquiry

Some materials have been removed due to 3rd party copyright. The unabridged version can be viewed in Lancaster Library - Coventry University.

Source: Creswell (2009: 12)

4.3.2 Research Strategy Adopted

Quantitative method and qualitative method are commonly described as belonging to the positivist and interpretive paradigm, respectively (Tuli 2010), and differ in components including: philosophical perspective and assumptions, methods (types) of studies, objective of research, questions or hypotheses, subject of research, the researcher, data and data analysis (Castellan 2010).

With respect to the DCs of SMPs, their survival, competitive advantage and performance, the researcher's ontological position of objectivism, and positivist epistemological stance

(indicated earlier) have laid the foundation for the methodological approach adopted in this study. In determining the choice of research strategy that enabled the research questions to be satisfactorily answered, and the aims and objectives of the study be achieved, the researcher recognised the desirability of the following:

- A high level of external validity and reliability of the results of the current study;
- Objective data to be collected from research participants (respondents), and analysed by the researcher who is independent of the SMPs (objects) in the study;
- The need for qualitative data via semi-structured interviews to enhance the understanding of the quantitative results (as well as increase its credibility and internal validity);
- The expectation of the outcome of the study to be generalizable to SMP population in the wider UK economy.

The reasons for combining quantitative and qualitative research include: (i) to enable confirmation or corroboration of each other through triangulation; (ii) to initiate new modes of thinking by attending to paradoxes that emerge from the two data sources; (iii) to enable or to develop analysis in order to provide richer data (Rossman and Wilson 1985). Other researchers posit that the broad purposes for mixed methodological research are: triangulation, development, complementarity, and expansion (e.g. Greene, Caracelli, and Graham 1989). Where the application of mixed methods design enables the collection of data by alternate method, and results from both methods converge, the ability to generalise from the sample to the population increases (Abowitz and Toole 2010). Quantitative data can play a role in providing baseline information during the data collection stage, and qualitative data can play a vital role by interpreting, clarifying, describing, and validating quantitative results at the data analysis stage (Johnson, Onwuegbuzie, and Turner 2007).

Tuli (2010) contends that the justification for using a specific methodology, including the data collection and analysis processes, should be the basis on which the credibility and authenticity of a research is assessed. The paradigm and research question(s) determine the most appropriate data collection and analysis methods (qualitative/quantitative or mixed methods) for a research project, although it may be possible for any (and all paradigms) to employ mixed methods in certain circumstances in which restriction to any one method, may potentially diminish and unnecessarily limit the depth and richness of a research project (Mackenzie and Knipe 2006).

Considering the study's positivist epistemological position, the study adopted a mixed methods design, with the quantitative approach emphasized over the qualitative method. The data gathered in the qualitative approach was used to support the quantitative data. This implies that the qualitative and quantitative data were mixed together by embedding the former into the larger quantitative data considering the supporting role of the qualitative data in the research. Johnson, Onwuegbuzie, and Turner (2007) argue that quantitative dominant mixed methods research is a mixed research with reliance on a quantitative research process, with concurrent recognition of the likely benefits of adding qualitative data and approaches. Thus, the collection of quantitative and qualitative data from SMPs was required.

The rationale for adopting a mixed research methods approach was to seek complementarity of both methods, that is, to seek enhancement, clarification, elaboration, and illustration of the results from the quantitative data (analysis) with the results from the qualitative method. Castellan (2010) argues that a small component of a cause and effect quantitative study can be qualitatively studied to result in a better understanding of the cause and effect results of a quantitative study. Also, mixing qualitative and quantitative methods allows a contribution of research styles whose strengths and weaknesses are counterbalanced as the inherent limitations of any singular methodological approach could best be addressed by applying a mixed methods research design which results in the use of more than one method (Abowitz and Toole 2010). Equally important, it is argued that mixed methods research often provide a more workable solution and produce a superior product (e.g. Johnson and Onwuegbuzie 2004).

In studying DCs as antecedents of the extent of diversification of service provision by small accounting practices in Norway, Doving and Gooderham (2008) adopted a quantitative research method by which data were collected from a large sample through a survey questionnaire. Also, in examining the relationship between success of new SME ventures in hi-tech industry and the characteristics of strategic alliances, Lee (2007) adopted a quantitative research method and used factor analysis to identify the latent dimensions or constructs of variables. Thus, the hypotheses developed in the current study will be tested and confirmed or refuted (Gray 2013), with empirical data analysed statistically using structural equation modelling (SEM). A number of prior studies had adopted this approach. For example: In their investigation of the impact of a firm's knowledge-based DCs on its innovation performance in the manufacturing industry, Zheng, Zhang, and Du (2011)

developed hypotheses which were tested using SEM.⁷³ Also, Jimenez-Jimenez and Cegarra-Navarro (2007) adopted a quantitative approach with data collected by interview, using a structured questionnaire, and statistically analysed using SEM. Further, Cepeda and Vera (2007) build on a knowledge management perspective in order to explain DCs concept, so as to enhance understanding of the link between dynamic and operational capabilities,⁷⁴ with data analysed using SEM.

Furthermore, very few studies have applied this combined approach in research on DCs in the US (e.g., Baird 2014). However, in the UK, a search of extant literature did not indicate any such studies. Therefore, this research contributed in filling that gap. Johnson and Onwuegbuzie (2004) argue that the specific data collection and data analytical methods employed by the researcher are not dictated by the logic of justification – an important aspect of epistemology. Creswell (2009) posits that a study can be more of one method than another or vice versa. Equally important, the data collected using the quantitative method were complemented by data collected via the qualitative method.⁷⁵

Furthermore the quantitative and qualitative data were collected sequentially, with the quantitative data collection taking place before the collection of the qualitative data. This was because although both approaches were based on the same theoretical foundation – the DCs theory – an initial and quick analysis of the quantitative data also informed the development of the qualitative design, especially with the semi-structured interview questions. This was in line with the leading quantitative approach supported by a qualitative approach adopted for the study. According to Creswell (2009: 14), ‘sequential mixed methods procedures are those in which the researcher seeks to elaborate on the findings of one method with another. ... Alternatively, the study may begin with a quantitative method in which a theory or concept is tested, followed by a qualitative method involving detailed exploration with a few cases or individuals’.

⁷³ The study conceptualised knowledge-based capabilities as a multidimensional construct (knowledge acquisition capability (KAC), knowledge generation capability (KGC), and knowledge combination capability (KCC)), with KCC directly impacting on innovation performance while mediating the process between KAC, KGC, and innovation.

⁷⁴ The study was carried out in three stages (literature review, expert panel, and questionnaire).

⁷⁵ Creswell (2009) describes this combination (mixed research methods approach) as an embedded design model.

4.4 RESEARCH TECHNIQUES

Having established the basis for adopting a mixed research methods design in the preceding sections, it is important to set out the means by which necessary data were collected. In this regard, it is argued that while the research design deals with the overall plan for the research, the techniques and procedures are about the granularity of data collection and analysis (Saunders, Lewis, and Thornhill 2012).

When a mixed methods research design is adopted, various data collection techniques⁷⁶ are often available to the researcher. Therefore, in deciding on the choice of suitable data collection methods, the researcher gave thought to the nature of SMPs, their operations, and the technique that would facilitate the necessary and relevant data to be procured in order to satisfactorily answer the research questions. Decisions about techniques and procedures involve the researcher being clear about the various qualitative and quantitative data collection techniques⁷⁷ and subsequent qualitative and quantitative data analysis procedures (Saunders, Lewis, and Thornhill 2012). Moreover, it is shown that the specific research methods involve the forms of data collection, analysis, and interpretation proposed by the researcher for the study (Creswell 2009).

Cognizant of the above and considering the non-availability of relevant sources of secondary data, primary data for the empirical study were collected by way of a survey instrument and semi-structured interviews. These methods enabled the collection of quantitative data for statistical analysis, and qualitative data for qualitative analysis. Creswell (2009) argues that the researcher should consider the full range of possibilities of data collection and organize such methods, for example, by the expected nature (or type) of data to be collected, and the type of data analysis expected.

4.5 TIME HORIZON

In selecting the time horizon for the current research, the researcher gave due consideration to conducting a cross-sectional study or a longitudinal study, while evaluating the contextual factors that may be influential, as follows:

⁷⁶ These include survey, interviews, and secondary data.

⁷⁷ Such as use of interviews, focus groups, questionnaires and secondary data.

Time is a crucial factor in selecting the time horizon for a study, and cognizant that this was a short-term academic research, a cross-sectional study using a point in time approach with data collected at one point in time using survey instrument and semi-structured interviews was adopted. Although it is argued that time constraint notwithstanding, it is possible to introduce a longitudinal element to a research, as there is a massive amount of published data collected over time that only need to be re-analysed (Saunders, Lewis, and Thornhill 2012), introduction of longitudinal elements into this research project was deemed neither feasible nor appropriate, especially considering the unavailability of secondary data.

Furthermore, mixed methods pose a number of challenges including extensive data collection, time-intensive nature of analysing qualitative and quantitative data, and the need for familiarity with both forms of research (Creswell 2009). In addition, the collection and analysis of both quantitative and qualitative data is a time-consuming and rigorous process (Creswell 2009) that would be beyond the time and resources available for this study. Therefore, with the embedded model design, the scope of the research was designed to satisfactorily answer the research questions and fulfil the aims and objectives of the study; however, it was reduced to the extent that it could be manageable in the timeframe and resources available.

The researcher also considered cost as an important element in the project, since a shortfall in finances would have hindered its pursuit. In this regard, the financial resources available for purposes of this study were deemed sufficient to absorb the cost of a cross-sectional study. This is in line with the view that cross-sectional studies are relatively less expensive and take up little time to conduct, considering that there is no loss to follow-up (Levin 2006; Mann 2003).

Also, the prevalent outcome of interest can be estimated because the sample is usually randomly taken from, and is often representative of, the entire population. Although differentiating cause and effect from simple association is a problem with cross-sectional studies as there are often a number of plausible explanations, such studies are best in determining prevalence and are useful in identifying associations that can then be more rigorously studied (Mann 2003).

4.6 ANALYSIS OF DATA

Considering that the DCs constructs in the conceptual research model are latent constructs that are unobservable and could not be directly measured, a statistical model capable of analysing the observable indicators of the constructs was required. Therefore, SEM was used in analysing the quantitative data. Data from the qualitative study were analysed qualitatively, to identify themes, categories, patterns and relationships, and connections between categories.

Specifying a statistical model describing the causal-effect relationships between variables is difficult in that the latent variables are not directly observable; however, the use of manifest variables (indicators) in SEM, makes it possible to measure such constructs (Crisci 2012). Thus, SEM is perfect for addressing business research problems, considering its ability to use unobservable, hard-to-measure latent constructs (Wong 2013). In addition, SEM can be used to simultaneously analyse the structural model⁷⁸ as well as the measurement model⁷⁹ (Crisci 2012). Therefore, with SEM, existent relationships among constructs of interest can be visually examined so as to prioritise resources to gain competitive advantage and improve performance (Wong 2013).

As the quantitative and qualitative data were separately analysed, the mixing occurred when the results of the analysis were interpreted and discussed. In the discussion of the results, the results from the analysis of qualitative data were used in explaining and supporting the results of the quantitative analysis. This convergence was important at that stage, considering both the quantitative and qualitative approaches were based on the same theoretical perspective (framework), that is, the DCs theory.

4.7 OPERATIONALISATION OF CONSTRUCTS AND VARIABLES

In developing the hypotheses in Chapter 3, various theoretical arguments supporting each hypothesis were outlined. Having identified and conceptualised the research model, its operationalization and measurement are the subsequent steps. Prior to experimentation or

⁷⁸ This shows the dependence between the latent variables.

⁷⁹ This shows the relationship between the latent variables and their manifest variables.

empirical observation, operationalization of underlying concepts is required, such that they can be observed to confirm that they have occurred (Creswell 2009). Operationalisation of concepts in a way that enables the quantitative measurement of facts is an important attribute of deduction (Saunders, Lewis, and Thornhill 2012).

Furthermore, in operationalising the manifest variables or indicators (measurement items and scales) for the latent constructs of the current investigation, there was the choice either to develop new measurement items and scales, or to adapt measurement scales that have already been validated by prior empirical studies (as in extant literature). However, because to develop, test, and validate new measurement scales could take a much longer period than available for this research project, in addition to the fact that such scales may be less acceptable (or credible) to the research community (as would not have been tested in other studies), the adaptation of already validated measurement scales was opted for. In this vein, it is argued that while measurement error is almost inevitable, the researcher's use of available validation techniques for measurement scales could help reduce the extent to which measurement errors affect the findings (Malhotra and Grover 1998). Thus, as the adapted measurement items were extensively pretested with academics as well as piloted with practitioners, content validity should be acceptable. See Table 4.1 (Appendix A) for adapted items/scales.

In this section, the relevant constructs are operationalised and measurement scales/items determined, as follows: independent variables, dependent variables, and moderating variables.

4.7.1 Independent Variables

4.7.1.1 Exogenous Variable

Strategic Leadership (Orientation)

DCs are acquired through a multistage organisational process (Lee, Chen, and Shyr 2011). Strategic leadership was operationalised by adapting four items relating to intelligence generation from Jimenez-Jimenez and Cegarra-Navarro (2007), Chaston, Megicks and Williams (2005); four items for competitive aggressiveness and risk taking from Wang (2008) and Wang and Ahmend (2004); and five items for technology and market orientation from Al-Ansaari, Bederr and Chen (2015), and Chaston, Megicks, and Williams (2005).

All the above measurement items were adapted, considering that the role of strategic leadership – a first-order DC – in the configuration and orchestration of the higher-order DCs (as shown in the research model), necessitated the use of a comprehensive measurement scale. Respondents were asked to respond on a 7 point Likert scale, with 7 = totally agree, and 1 = totally disagree.

4.7.1.2 Endogenous Variables

Organisational Learning

Since the formulation of strategy requires the environment to be scanned in order to identify opportunities and threats, including competitor behaviour, competitive scanning is important to firm competitiveness (Andrews 1971). With regards to learning, two items for commitment to learning and three items for sensing capability were adapted from Wang (2008) and Pavlou and El Sawy (2011) respectively. A further three items for organisational learning were adapted from Garcia-Morales, Llorens-Montes and Verdu-Jover (2006), and three items for knowledge acquisition were adapted from Jimenez-Jimenez and Cegarra-Navarro (2007), and Chaston, Megicks and Williams (2005).

The above items were adapted on the basis that organisational learning involves commitment, sensing the internal and external environment, acquiring knowledge by employees, and transforming individual knowledge to organisational knowledge. Survey participants were required to respond on a 7 point Likert scale, with 7 = totally agree, and 1 = totally disagree.

Corporate Alliance & Networks

Corporate alliances and networks were operationalised with two items for alliance and networks adapted from Al-Ansaari, Bederr and Chen (2015), and two items for external linkages adapted from Lee, Chen, and Shyr (2011). The two items adapted from each of the above-mentioned previous studies were the most relevant in the context of the current study, and ensured that the construct was appropriately represented by the adapted measurement items. Research participants used a 7 point Likert scale to answer the relevant questions, with 7 = totally agree, and 1 = totally disagree.

Innovativeness

SMP innovativeness was operationalised as follows: three items for process innovativeness were adapted from Schilke (2014a), and Wang and Ahmed (2004); three items for product innovativeness adapted from Messeghem (2003) and Wang and Ahmed (2004); three items for market innovativeness adapted from Wang and Ahmed (2004), and Messeghem (2003).

Innovativeness is not just about new products but also includes introduction of new processes, and venturing into new markets. This is typical of the accountancy practice industry. Hence the measurement items relating to process, product, and market innovativeness were adapted from previous studies. Participants responded on a 7 point Likert scale, with 7 = totally agree, and 1 = totally disagree.

Organisational Ambidexterity

Benner and Tushman (2003) conceptualized ambidexterity⁸⁰ as encompassing more than just product design. They proposed a two-dimensional definition, entailing exploration and exploitation differences along an innovation's proximity to the firm's current technological/product trajectory. He and Wong (2004) extended Benner and Tushman's (2003) conceptualisation by designing a measure based primarily on product design differences involving exploration and exploitation, that is, the closeness of a firm's innovation to its current customers or market segment.

Lubatkin et al. (2006) adapted and extended He and Wong's (2004) measures, developing and validating a final measure that consisted of 12 items. Three items were adapted from Lubatkin et al. (2006). One item from Jansen, Van den Bosch, and Volberda (2006), and three items from Lubatkin et al. (2006), and Jansen, Van den Bosch, and Volberda (2006). It was necessary to adapt these items since together, they measure exploration and exploitation – the two components of ambidexterity. A 7 point Likert scale, with 7 = totally agree, and 1 = totally disagree, was employed.

The research questionnaire is shown in Appendix B.

⁸⁰ This is also known as ambidextrous orientation.

4.7.2 Dependent Variable

Firm Performance

The concept of performance is multidimensional (Lumpkin and Dess 1996), with many different performance indicators (Venkatraman and Ramanujam 1986) often distinguished between financial and non-financial measures (Rauch et al. 2009). There are important differences between these measures, although theoretical and empirical relationships exist between them (Combs, Crook, and Shook 2005). The entrepreneurial orientation (EO)-performance relationship may be influenced by the choice of indicators by which performance is assessed (Lumpkin and Dess 1996); however, more recent study using meta-analysis shows that there is a robust EO-performance relationship across different measures of EO as well as different performance measurements (e.g. Rauch et al. 2009).

In this study, the partner's self-report of SMP performance is used because objective data on the financial performance of many SMPs, as SMEs, is not readily available especially as owners/managers do not usually have the legal obligation to publish these data. Also, partners at SMEs are, a priori, as knowledgeable informants as CEOs. Lubatkin et al. (2006) contend that it is generally assumed that CEOs are knowledgeable informants, particularly with regard to their firms' performance. A number of studies have successfully used self-report data to analyse financial and operational performance (e.g. Lee and Lim 2009; Lubatkin et al. 2006; Dess, Lumpkin, and Covin 1997).

Self-report or archival data obtained from secondary sources could be used to measure financial performance; however, self-reported data could be subject to bias resulting from memory decay, common method variance, and/or social desirability (Rauch et al. 2009). That notwithstanding, with self-reported data, multiple dimensions of performance, including comparison with competitors, could be investigated (Wiklund and Shepherd 2005). Furthermore, it is argued that reliability and validity are enhanced, considering that subjective performance measures could be consistent with objective measures (Venkatraman and Ramanujam 1987; Dess and Robinson 1984).

In order to ensure that both financial and non-financial aspects of firm performance are measured, three items for financial performance were adapted from Arend (2014); Avci,

Madanoglu, and Okumus (2011), and two items measuring strategic performance were adapted from Arend (2014), and Schilke (2014a). A 7 point Likert scale was used, with 7 = totally agree, and 1 = totally disagree.

4.7.3 Control Variables

Empirical evidence suggests that other variables may affect firm performance (e.g. Sirmon and Hitt 2009). Considering the conceptual model developed for this study (in Chapter 3), the control variables that could impact the relationship between the independent variables and the dependent variable are SMP age, SMP size and environmental dynamism.

Firm Size

Firm size was determined by measuring the total number of employees in an SMP, as reported by the partner. Firm size has been controlled for in a number of studies (e.g. Schilke and Goerzen 2010; Sirmon and Hitt 2009; Lee and Lim 2009; Lubatkin et al. 2006). The measurement items/scales adapted for this study are stated in Table 4.2. Consistent with the definition of an SME (European Commission 2003), firm size was categorised into three groups: micro (1-9 employees), small (10-49 employees), and medium (50-249 employees). Respondents were required to indicate the number of employees in their firms by choosing one of the three categories.

Firm Age

Firm age was controlled by considering the number of years of existence of an SMP, as reported by the partner/director. Firm age has been controlled for in a number of studies, in order to determine its impact on performance (e.g. Hui et al. 2013; Loderer and Waelchli 2010). The age of the firm was split into the following age ranges (in years): ≤ 5 ; 6 – 10; 11 – 15; 16 – 20; > 20 . Respondents had to select the age range that relate to their firms.

Environmental Dynamism

Environmental dynamism has been associated with an organisation's motivation to adapt to changing state of resources and firm performance (Lubatkin et al. 2006). It was operationalised as follows:

- Difficulty to forecast or predict changes in the industry adapted from Schilke (2014a), and Pavlou and El Sawy (2011).

- Intensity of competition in the industry adapted from DeSarbo et al. (2005); Birkinshaw, Hood, and Jonsson (1998; and Jaworski and Kohli (1993).
- Changes in products or services adapted from Schilke (2014a); Pavlou and El Sawy (2011); Volberda and Van Bruggen (1997); and Jaworski and Kohli (1993).

The above scales were adapted considering that they were the most appropriate in the context of this study.

Previous studies have used environmental dynamism as a control variable (e.g. Kristal, Huang, and Roth 2010). A 7 point Likert scale was used to solicit response from research participants.

The indicators are shown in Table 4.2: The latent constructs and their measurement items (See Appendix I), and the questionnaire is shown in Appendix B

[INSERT TABLE 4.2 ABOUT HERE]

With operationalization of constructs, the outer (measurement) model is determined, indicating the observed (manifest) variables relating to each latent construct. This is illustrated in figure 4.1 below.

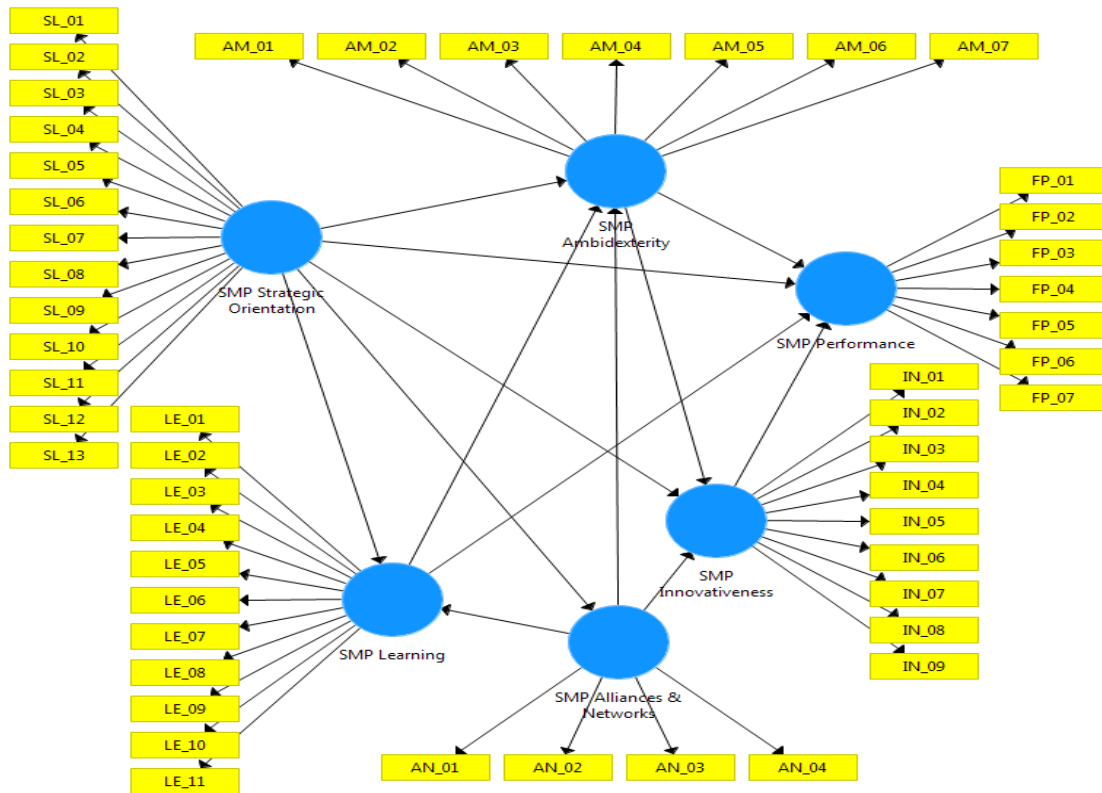


Figure 4.1: Research model showing the DCs constructs and their measurement items.

The above figure shows the measurement and structural models.⁸¹

As the causal relationship (shown above) is from each latent construct to its observed variables, the measurement models are reflective. This implies that each measurement item is considered created ‘an error-afflicted measurement of the latent variable’ (Henseler, Ringle, and Sinkovics 2015: 289).

The operationalization of the latent constructs made it possible to determine the manifest variables for which data was collected to estimate both the structural model and measurement model. It also enabled the determination of the direct and indirect path relationships (effects) amongst all latent constructs in the nomological network (see Chapters 5, 6 & 7). The data were collected by way of a survey instrument, discussed in the next section.

⁸¹ Diagram produced using SmartPLS (V. 3.2.6) – the software used in running the SEM. The control variables are not shown in the diagram. This is because in SmartPLS, the effects of control variables are determined using its Multi-Group Analysis (MGA) function.

4.8 SURVEY INSTRUMENT

Although the survey strategy includes data collection techniques such as structured observation, structured interviews, and questionnaire (Saunders, Lewis, and Thornhill 2012), the survey questionnaire was specifically deployed in this investigation. Two methods of survey questionnaire could be employed – mail and/or online (web); however, the mail (postal) questionnaire was the survey instrument of choice applied in this project. Considering the wide geographical spread of SMPs across the UK, and the need to obtain data from a representative sample of these firms, the online questionnaire would have enabled the researcher to easily reach out to sample SMPs at much less cost. However, because there are still SMPs without web presence, such SMPs would not have been contactable if they were part of the sample. Thus, the mail questionnaire was preferred because it guaranteed that all sample SMPs could be reached using the same method. In addition, mails to every part of the UK are delivered quite swiftly by Royal Mail (the main UK Postal Service).

Furthermore, for some SMPs with web presence, email addresses of potential respondents in the SMPs were usually not made available, either on the website of the firm or when requested from the firm. Thus conducting an online survey would have meant that a number of potential respondents could not have been reached. Therefore, the postal survey ensured that every sample SMP and potential respondent could be reached, thereby avoiding bias in the sampling frame that could have resulted from excluding non-users of email (and internet).

4.8.1 Design of the Survey Instrument [Questionnaire]

In designing the survey instrument for the study, attention was paid to the wording of the questionnaire, the population of interest (the SMPs), potential respondents in the sample firms, as well as the layout of the survey form. It was important that the questions posed were relevant to the aims of this study, and solicited objective responses that could be analysed to confirm or refute the hypotheses developed herein. Equally important, due consideration was given to the choice of words used in the questions, to ensure that they were unambiguous and conveyed only the meaning for which they were intended.

Also, the layout of the instrument was designed such that it was easy to complete, and be able to move from one section of the survey form to another without difficulty. In light of this, the

survey form was divided into seven sections, based on the DCs latent constructs the measurement items were designed to capture. At the beginning of each section, there was instruction on answering the questions. Janes (2001: 420) argues that everything in designing a survey questionnaire should be geared at ensuring that the instrument is ‘interesting, attractive, and easy to fill out and return.’ See Appendix A for measurement scales/items adapted. Furthermore, a brief covering letter was attached to the questionnaire, to better inform respondents of the nature and purpose of the research. It also stated that the research had received ethical approval, participation was voluntary and requested each respondent’s consent in using the information (data) provided. See Appendix B for the covering letter and questionnaire.

4.9 CONDUCTING THE SURVEY

4.9.1 Overview

The research was conducted in stages, beginning with the review of extant literature from which constructs were identified and measurement instruments, validated in prior studies, were adapted. Such validated instruments included independent, dependent, and moderator variables, thereby reducing the contradictory effects in determining the true relationship amongst variables (Malhotra and Grover 1998). See Table 4.2 (in Appendix A).

To ensure the relevance of the instruments adapted to this study, they were initially pretested with a number of academics who are familiar with the literature. The feedback obtained was used to refine the measurement instruments. Then a pilot study was conducted with a number of SMPs in order to further validate the instruments. Malhotra and Grover (1998) posit that careful pretesting of instruments in the field would enable the researcher to gain comfort that the conceptualizations are in line with the experience of the practitioner.

4.9.2 Procedures to prevent Common Method Bias

4.9.2.1 Choice of Potential Respondents

Since the study aimed at investigating the effects of DCs on SMPs' performance, potential respondents in sample SMPs were partners and senior partners, as they occupy very senior positions within, and are knowledgeable of, the firms. Malhotra and Grover (1998) argue that where the unit of analysis is the organisation, the respondent chosen should be appropriate and knowledgeable to respond to questions relating to organisational level variables. The approach adopted in this study is also consistent with the argument expressing the importance that the person(s) in the organisation that is most knowledgeable about the construct of interest be chosen (Huber and Power 1985), and that the difficulty in the task to answer the questions be equal to the capabilities of respondents, so as to ensure that the questions are accurately answered (Podsakoff, MacKenzie, and Podsakoff 2012).

4.9.2.2 Pre-test of survey instrument

The developed questionnaire was initially pretested with four academics and three research students in the Faculty of Business and Law at the University, the results of which led to some modification to the questionnaire. A second pretesting was conducted with another six academics and four research students, which also led to certain changes to the instrument. The essence of carrying out extensive pre-test was to ensure that the questions were reasonable, easy to understand and relevant to the research, thus enhancing content validity and face validity. Also, the extensive pretesting enabled an assessment of the questionnaire design, that is, whether it was easy to move from one section of the instrument to the other and in completing the form. This extensive pretesting was equally aimed at minimising the potential for inaccurate responses that result in common method bias. It is argued that that the difficulty of accurately responding to questions can be reduced by the use of concise and clear language, labelling all scale points (and not just the end points), as well as avoiding ambiguity and double-barrelled items (Podsakoff, MacKenzie, and Podsakoff 2012; Harrison, McLaughlin, and Coalter 1996). With the instrument successfully pretested, ethical approval was obtained, and then a pilot study conducted.

4.9.2.3 Pilot Study

In conducting the pilot study, a sample of ten (10) SMPs was randomly selected from the list of accountancy firms in and around the city of Coventry, as listed on the online business directory of the Yellow Pages. The printed questionnaire, a self-addressed stamped envelope and a covering letter – having an explanation of the study and a consent form – see Appendix B, were mailed to the sample respondents. Developing a good cover story and instructions increases the probability that respondents will endeavour to accurately respond to questions (Aronson, Wilson, and Brewer 1998). After despatching the questionnaire, potential respondents with email addresses were sent detailed explanation of the research, its importance, and how the data will be used, in order to solicit their assistance in completing the questionnaire, while those without email addresses were contacted by phone. By explaining how the information provided will be used, how it could benefit respondents and their organisation, and promising feedback, respondents' motivation to accurately answer questions is increased (Podsakoff, MacKenzie, and Podsakoff 2012).

The pilot study was geared at reviewing content validity, to ensure that the questions were asking exactly what they intended to measure. This was confirmed through post questionnaire interviews with respondents of the pilot study. Furthermore, due to the very small sample size, it was not intended to run any specific statistical analysis (e.g. to determine factor loadings) at that stage. Three completed questionnaire (i.e. 30%) were returned after a week. No further completed questionnaire was received notwithstanding the researcher's follow up calls. The completed questionnaire were analysed and no areas were identified as requiring modification.

4.9.3 Attempts at networking with other organisations

To enhance the generalizability of a study of this nature, it is important to obtain a reasonable response rate from the survey. Because accountancy firms do receive many solicitations in the course of the year to complete surveys (including from accountancy bodies, consulting firms and individual researchers), it was deemed that deploying questionnaire for this study to sample SMPs via a recognised and respected organisation such as the ACCA⁸² or ICAEW⁸³

⁸² ACCA: The Association of Chartered Certified Accountants.

⁸³ ICAEW: The Institute of Chartered Accountants in England and Wales.

would guarantee a reasonable response rate. Thus, the ACCA and ICAEW were contacted by phone and assistance in reaching out to their member firms was requested. After a couple of phone calls, the ICAEW declined to assist while the ACCA demanded that an email be sent specifying the sort of assistance that was needed. After a number of email exchanges, the ACCA explained that it had already sent out many surveys to its members, and that it did not want to continuously bombard members with questionnaires. The ACCA further suggested that a one page summary of the research project be sent to its office, to be published in its monthly magazine that is distributed to its member accountancy practices, including SMPs. ACCA's view was that should an SMP become interested and willing to participate after reading about the research, the researcher would directly be contacted by the SMP. Because ACCA's proposal was not convincing, I decided not to proceed with the request.

Cognisant of the above, the researcher decided to seek assistance from Robert Half International, SF Group, and Hays – three renowned recruitment firms operating in the UK. However, exchanges with these firms did not yield any successful outcome. Therefore, in order to achieve a reasonable outcome in the study, it was necessary to directly reach out to sample SMPs.

4.10 DEPLOYMENT OF SURVEY FOR DATA COLLECTION

4.10.1 Sampling

Determination of the correct sample from which data are collected is an important aspect of data collection process and of the study, since the representativeness of the sample is crucial to the generalisation of the research findings. The sampling frame from which a sample is selected and the response rate determine how well results of the study can be generalised to the entire population of SMPs. The sample used in a large cross-sectional study is often obtained from the entire population, an optimum situation to ensure a high representativeness of the sample to be selected using a random sampling technique (Levin 2006). With a representative sample, the researcher needs to ensure that the data collection instrument is well designed and piloted, and there is a good response rate (Saunders, Lewis, and Thornhill 2012).

4.10.1.1 Sampling Frame

SMPs in the UK were the target population for the research. The Standard Industrial Classification (SIC) code of economic activities for accounting activities was used to identify the population of accountancy firms that are registered for business in the UK. The total listing was obtained from the FAME database,⁸⁴ using the UK SIC code 69201 for businesses exercising accounting and auditing activities. This list constituted the sampling frame as it was obtained from a credible source. Identifying the population of accountancy firms through the SIC code gives adequate assurance as to the completeness of the sampling frame. Fowler (2014) contends that description and justification of the sampling frame is a minimum requirement for any survey research.

Based on the research question, the sample population was selected from the sampling frame. On its website, 'Accountancy Age' ranks the top 100 accountancy firms in the UK by annual fee income. The annual fee income per this website for firms above the SME threshold was corroborated with that on each firm's relevant published financial information submitted to UK Companies House. The annual fee income (turnover) of accountancy firms that are disclosed on the website helped in distinguishing the large accountancy firms from the SMPs. Once the larger accountancy firms had been identified and eliminated, sample SMPs were selected from population constituting only SMPs. This approach was more efficient as it meant that any sample selected automatically excluded the larger accountancy firms. Furthermore, by ensuring that elements that should be part of the population of interest are included, and elements that should not be are excluded, the accuracy of the sampling frame for the current study was assured.

4.10.1.2 Sampling Method

The random selection of a sample from a sampling frame comprising the entire SMP population ensures that the characteristics of the subjects in the study are representative of their characteristics in the total population (Bogdan and Biklen 2007; Malhotra and Grover

⁸⁴ Fame is a database containing detailed financial information on over 2 million public and private companies in the UK and Ireland. The database can be used to search for company financial information, company contact details, key employees and company directors, share prices for listed firms, ownership data and competitor analysis.

1998). In order for the study's results to be generalised to the population, the sample selected as well as the respondents must be representative (Levin 2006). Cognizant of the above, therefore, simple random sampling was used in selecting the sample, so that every SMP had the chance of being selected. This was to enable the generalizability of the outcome of the study to be more acceptable to the research community.

4.10.1.3 Sample size

Adequacy of sample size: Minimum sample size for a given population in organisational research is suggested by Bartlett, Kotrlik, and Higgins (2001) who argue that for a population size $\geq 10,000$, and an acceptable error rate (error margin) of 3%, a sample size of 119 (at $\alpha = 0.05$) and 209 (at $\alpha = 0.01$) would be required for continuous data. Therefore, the need to achieve a response rate that met this sample size threshold was the determining factor in selecting the sample of SMPs for potential respondents.

The SMPs that were sampled in the pilot study and those who attended the SMP conference (see subsection below) were excluded from the sampling frame before the sample for the postal survey was selected.

4.10.2 Survey Deployment

4.10.2.1 SMPs' Conference

Considering the low response rate that researchers usually achieve when using questionnaire, considering that partners in SMPs do have quite busy schedules, and considering the failure to get assistance from accountancy bodies and other organisations contacted, it was important to map out a strategy that would result in obtaining a reasonable response rate from the survey.

In July 2016, I participated in a conference in Birmingham (UK), for SMPs, organised by a consulting firm (2020 Innovation). Prior to the conference, I spoke to the organisers about the research and that I would ask conference participants to complete the survey. The discussion was made easier since I had met the organisers earlier at the Accountex Conference for practising accountants in May 2016 (in London), where I spoke briefly to a number of

exhibitors about my research. At the SMP conference in Birmingham, the organisers explained to conference participants that the study was relevant to the industry and that summary report of its findings would be made available.

The questionnaire and the covering letter were distributed to the fifty-seven firms (SMPs) in attendance at the conference.⁸⁵ Twenty-eight forms (questionnaire) were returned, twenty-five of which were complete and three incomplete.

4.10.2.2 Postal Surveys

The researcher went through the website of each sample SMP selected from the sampling frame, to identify the postal address of the firm, and the name and email address of the potential respondents (managing partner, senior partner or director). For sample SMPs without a website, a google search was made to obtain the postal address, while details of each firm's director(s) were obtained from the website of UK Companies House.

As indicated earlier in the literature review, SMPs in the study have been defined in line with the definition of SMEs. The data were collected during a three month period, from July 2016 to September 2016. Due to the manual process involved in identifying each potential respondent, email address, phone number, and postal address for each sample firm, the printed questionnaire with covering letter and self-addressed stamped envelope were posted in batches from 150 to 250 each week. By addressing the questionnaire directly to a specific (named) partner/director of the SMP, questionnaires could be validated as having been completed by the respondent addressed to.

4.10.2.3 Mitigating Non-response

The questionnaire was designed to have the minimum length possible, in order to render it appealing to potential respondents. Furthermore, in order to improve the response rate, the researcher directly reached out to potential respondents via email and/or phone calls after despatching the survey instrument. Thus, in addition to the covering letter that was sent out

⁸⁵ The conference information booklet listed the names of all the fifty-seven SMPs in attendance. In order to avoid duplication, these SMPs were removed from the sampling frame before the sample for the postal survey was selected (see next section – Postal Surveys).

with the questionnaire, the email and/or phone call further solicited response by explaining the purpose of the research and its importance to SMPs. In the process, a number of positive, encouraging and motivating feedback were received from scores of SMPs who expressed interests in receiving a summary report of the findings of the research. This shows that by directly contacting respondents (Mann 2003), the problem of nonresponse could be minimised (Levin 2006).

The postal survey was sent out to potential respondents in 1450 SMPs across England, Scotland, Wales and Northern Ireland. Ten (10) questionnaires were returned due to incorrect postal address. Twenty-five (25) questionnaires were returned uncompleted as the respondents indicated their unwillingness to participate in the survey. Three (3) indicated that they would not complete the questionnaire because they were at the point of retiring. 298 completed questionnaires were received, giving a response rate of 20.41%. Thus, a total of 326 surveys were completed (298 postal and 28 completed at the SMPs conference in Birmingham), giving an overall response rate of 21.5%.⁸⁶

4.11 CODING AND VALIDATION OF DATA FROM SURVEY QUESTIONNAIRE

The survey asked respondents, who are partners/directors (that is, senior management) of sample SMPs, to answer questions regarding accountancy body, size and age of the firm, perception of the changes in the business environment, strategic orientation, approach to learning, alliances and networks, ambidexterity, innovativeness, and performance. A 7-point Likert scale was used on which respondents rated the questions, with lower scores indicating lower levels of agreement with a specific statement. This was consistent across all variables.

All the completed questionnaires (from both the conference and by post) were sequentially numbered upon receipt. At the end of the data collection period, the responses from sample cases were entered into an excel worksheet, manually by the researcher, in line with numbering. The manifest variables were shown in the top row, followed by the response from each sample case.

⁸⁶ The three completed questionnaires from the pilot study were added to the questionnaires that were completed in the main survey deployment, and analysed together.

The responses were coded in line with the seven point Likert scale used in the survey.⁸⁷ After all the sample cases had been entered on the spreadsheet, the completed surveys were given to a research student for cross-checking. Although no errors were found, a further research student was hired to perform another error checking exercise. This second verification exercise did not also find any discrepancy between responses on the questionnaire and the data per the spreadsheet. This gave assurance on the accuracy of the data entry and codification, and indicated that there is no sampling error relating to data processing.

4.12 COLLECTION OF QUALITATIVE DATA – **Semi-structured interviews**

Earlier in this chapter, the basis for the collection of qualitative data was set out, and the adoption of a leading quantitative (deductive) approach, supported by a qualitative (inductive) approach for this study was presented and justified. In this section, the actual collection of qualitative data is outlined.

4.12.1 Design of semi-structured questions

The development of semi-structured interview questions was founded in the literature, and centred on this study's conceptual model. A semi-structured interview approach was adopted because it made it possible for follow-up or additional questions to be immediately asked following an interviewee's response to an initial question. By so doing, more data (volume and quality) that could help shed light on the construct(s) of interest in the research model were generated. Equally important, such data could complement or explain the path relationships (results) identified in the quantitative analysis, contradict such results (see

⁸⁷ **SIZE:** With respect to SMP size, the coding of data was made as follows: 1 for SMPs with 1-9 employees; 2 for SMPs with 10-49 employees; 3 for SMPs with 50-249 employees. There were no respondents for SMPs with 250 or more employees.

AGE: SMP age, being the number of years the firm has been operating from its inception, was coded as follows: 1 for up to 5 years in operation; 2 for 6 - 10 years; 3 for 11 - 15 years; 4 for 16 - 20 years; 5 for over 20 years. However, in performing the statistical analysis for the effect of SMP age as moderator, the age categories 1 (1 to 5 years) and 2 (6 to 10 years) were put together, that is, SMPs from 1 - 10 years formed a single category and were analysed as such. Similarly, SMPs with 10 – 15 and 16 – 20 years were grouped together in the same category and analysed as such. This was because the sample size in each of the original categories (i.e. SMPs with 1-5 years, 6 - 10 years; 11 – 15 years; and 16 – 20 years) was too small (and did not meet the threshold for sample size) for a SEM analysis.

chapters 5, 6 & 7), or identify and explain existing path relationships that were not established in the conceptual research model.

Because the quantitative data was collected prior to the collection of qualitative, the semi-structured interview questions were informed by a quick review and analysis of the quantitative data, in addition to the DCs theory. This was to ensure that the interviews provided data that could explain some of the quantitative data.

4.12.2 Conducting the semi-structured interviews by phone

Following ethical approval by the Faculty of Business and Law for interviews to be conducted, an email was sent to a number of potential respondents, each in a different SMP, soliciting participation in the research. Since partners/directors with responsibility and knowledge of their relevant SMPs had been identified as potential respondents, and their email addresses obtained, the email was sent directly to each partner or director. The objective, importance, relevance of the study, anonymity of respondents and use of interview data were explained in the email. In addition, the semi-structured interview questions were attached to the email to potential respondents so that potential respondents could become aware of the subject areas around which the interview would focus.

The email soliciting participation in the research was followed by a phone call directly to potential respondents who had not responded after one week. As a result, 10 interviews were conducted with a partner/director of 10 SMPs over the phone. On average, each interview lasted about 40 minutes. In a number of cases, there was follow-up interview after transcription, to discuss or clarify certain aspects picked up during the first interview. The transcribed data are analysed in chapter 9.

4.13 CHAPTER SUMMARY

This chapter has presented the methodology applied in this research. In so doing, the philosophical leanings of the researcher were highlighted as the basis for the positivist epistemological position and objectivist ontological position adopted for the study. A mixed

research methods design was adopted, with a leading quantitative approach whereby quantitative data are supported by qualitative data. This is because there is more insight to be gained from the combination of both qualitative and quantitative research than from either form by itself (Creswell 2009). In respect of research technique, the use of survey instrument to collect quantitative data, and semi-structured interviews for qualitative data were advanced and justified.

The chapter also discussed the processes involved in collecting the qualitative and quantitative data for the research. With respect to the quantitative data, the DCs latent constructs (independent variables) and dependent variable were operationalised prior to developing the survey instrument (questionnaire). The sample was selected from the FAME database. The survey was piloted and then data collected by way of postal survey.

The qualitative data was collected through semi-structured interviews. The semi-structured questions were equally based on the DCs theory and were also informed by a quick initial review (analysis) of the responses from the postal survey. The analysis and discussion of empirical results of the quantitative and qualitative data are covered in Chapters 5, 6 and 7.

CHAPTER 5: THE DIRECT INFLUENCE OF FIRST-ORDER AND HIGHER-ORDER DYNAMIC CAPABILITIES ON FIRM PERFORMANCE

5.1 INTRODUCTION

The processes involved in collecting data were discussed in Chapter 4. This study's conceptual model, developed in Chapter 3, presented the theorised (hypothesised) relationships between the constructs. In this chapter, the data is prepared for analysis, and the quality criteria (fit) of the model are assessed. The direct relationships between DCs and firm performance are analysed as the relevant hypotheses are tested and the results discussed. The discussion of the empirical results from testing the hypotheses are supported by data obtained from the qualitative study.

The chapter is split as follows: data preparation; use of structural equation modelling; evaluation of theoretical research model; evaluation of predictive relevance of the model; tests of hypotheses for the direct relationship between DCs and firm performance; evaluation of the effects of control variables and; summary.

5.2 DATA PREPARATION

5.2.1 Overview:

The coding and validation of data have already been explained in Chapter 4 – Methodology & Data Collection. In this section, descriptive statistics are provided, missing data evaluated, and normality of data assessed as follows:

5.2.2 Representativeness of Accountancy Body Membership in Sample SMPs

The sample respondents constituting the 317 usable surveys comprised of partners/directors of 80 ACCA member SMPs, partners/directors of 148 ICAEW member firms, partners/directors of 60 ICAS⁸⁸ member firms, partners/directors of 12 combined ACCA and

⁸⁸ ICAS: Institute of Chartered Accountants in Scotland.

ICAEW member SMPs, partner of 1 ICAI⁸⁹ member firm, and partners/directors of 16 SMPs with other accountancy body⁹⁰ membership. The breakdown of respondent SMPs is shown in Table 5.1 below.

ACCOUNTANCY BODY MEMBERSHIP				
	Frequency	Percent	Valid Percent	Cumulative Percent
ACCA	80	25.2	25.2	25.2
ACCA+ICAEW	12	3.8	3.8	29.0
ICAEW	148	46.7	46.7	75.7
ICAI	1	0.3	0.3	76.0
ICAS	60	18.9	18.9	95.0
OTHER	16	5.0	5.0	100.0
Total	317	100.0	100.0	

Table 5.1: Composition of sample SMPs

5.2.3 Representativeness of Size of Sample SMPs (respondents)

The number of staff employed by each sample SMP is as follows: 204 SMPs employ less than 10 staff, 88 SMPs employ less than 50 staff, and 25 SMPs employ less than 250 staff. This is shown in the Table 5.2 below.

NUMBER OF EMPLOYEES				
	Frequency	Percent	Valid Percent	Cumulative Percent
[1-9]	204	64.4	64.4	64.4
[10-49]	88	27.8	27.8	92.1
[50-249]	25	7.9	7.9	100.0
Total	317	100.0	100.0	

Table 5.2: Sample SMPs, by number of employees

⁸⁹ ICAI: Institute of Chartered Accountants in Ireland.

⁹⁰ 'Other accountancy body' has been used to describe SMPs with a membership of two or more accountancy bodies (for example, ICAS, ICAEW, ICAI, ACCA, AAPA, CIMA, ICPA, CIOT). This excludes those with combined membership of ACCA and ICAEW.

5.2.4 Representativeness of Age of Sample SMPs (respondents)

The sample SMPs had the following age distribution: up to 5 years were 37 firms; from 6 to 10 years = 46 firms; from 11 to 15 years = 35 firms; from 16 to 20 years = 26 firms; and greater than 20 years = 172 firms. This is shown in Table 5.3 below.

Age [in Years]	Frequency	Percent	Valid Percent	Cumulative Percent
[<5]	37	11.7	11.7	11.7
[6-10]	46	14.5	14.5	26.2
[11-15]	35	11.0	11.0	37.2
[16-20]	26	8.2	8.2	45.4
[>20]	173	54.6	54.6	100.0
Total	317	100.0	100.0	

Table 5.3: Age distribution of sample SMPs

5.2.5 Descriptive Statistics

Generally, the actual responses to the questions ranged from 1 to 7. The mean of responses for manifest variables ranged from 2.48 to 6.04, with standard deviation (STDEV) ranging from 0.878 to 1.873. Although many observations had $STDEV > 1$, the STDEVs were just above 1, with no extreme cases. These are shown in Table 5.4. Furthermore, considering the differences among SMPs (e.g. in use of technology, markets served, services provided, location), the spread, as determined by standard deviation (σ) is normal. Also see subsection on outliers.

Descriptive Statistics

Manifest Variables	N	Range	Minimum	Maximum	Mean	Std. Deviation
SL_01	317	5	1	6	2.48	1.449
SL_02	317	6	1	7	4.69	1.622
SL_03	317	6	1	7	5.60	1.188
...
FP_01	316	6	1	7	4.68	1.592
FP_05	316	5	2	7	5.07	1.143
FP_06	316	6	1	7	4.63	1.539
FP_07	316	6	1	7	4.23	1.460
Valid N (listwise)	303					

Table 5.4: Descriptive statistics for completed surveys

Note: The complete data for the descriptive statistics are detailed in Table 5.4a in Appendix C.

5.2.6 Missing Data

‘Missing data occurs when a respondent either purposely or inadvertently fails to answer one or more question(s)’ (Hair et al. 2014: 51). Of the 326 completed questionnaires, 7 had missing data of more than 15%. These observations were removed from the dataset. This is in line with the argument that an observation is removed from the dataset if the amount of missing values exceeds 15% (Hair et al. 2014). Furthermore, 2 questionnaires were eliminated from the study because although they had no missing data, the respondents had indicated that they were at the point of retiring from the profession and, as such, were neither accepting new clients nor seeking any growth or development of their firms.

Also, for 2 observations, although the amount of missing data were 15% and 13%, these observations were removed from the dataset because the missing data made up 75% and 100%, respectively, of specific latent constructs – alliances & networks, and performance. These two observations were removed after analysing the pattern of missing data (see the next section). In this regard, Hair et al. (2014) posit that even if the overall missing values for an observation does not exceed 15% but there is a high proportion of missing responses for a single construct, it could be removed.

Finally, there were 14 observations with missing data of 15% or less (excludes the two observations mentioned in the preceding paragraph). In line with Hair et al. (2014), these were considered usable responses and included in the dataset. Thus, in addition to the 301 observations with no missing data, the total number of usable observations was 315 (that is, 301 + 14). This gives a net response rate of 20.8%.⁹¹

5.2.7 Evaluation of Missing Data

For the research results to be generalised, the issues originating from the existence of missing data need to be addressed (Hair et al. 2010). In order to identify the pattern of missing data, the researcher needs to ascertain their prevalence, as well as whether or not missing data are randomly scattered throughout the observations (Hair et al. 2010). It is necessary to ascertain the kind of missing data when using such data (Marko and Mooi 2014) in order to choose a suitable course of action (Hair et al. 2010). To determine if missing values were missing completely at random, Little's MCAR test (Little 1998) was performed using IBM SPSS 24.⁹² At $\alpha = 0.05$, the results were $\chi^2 = 667.386$, $DF = 624$, and $P\text{-value} = .111$. With $P > 0.05$, the result is statistically non-significant, and indicates weak evidence against the null hypothesis. Thus, the null hypothesis was not rejected, confirming that missing data were missing completely at random. See Table 5.4.1 (in Appendix C).

[INSERT TABLE 5.4.1 ABOUT HERE]

When the level of randomness of the missing data process is such that they are Missing Completely At Random (MCAR), any type of missing data remedy can be accommodated, since at such high level of randomness, observations with complete data are indistinguishable from those with missing values (Hair et al. 2010). When missing data are MCAR, it implies that there is no systematic missing data process, as well as no hidden impact on the results that must be taken into consideration when the results of the research are interpreted (Hair et al. 2010).

⁹¹ 1450 mail questionnaires and 57 questionnaires distributed at the Small firms' conference. This makes a total of 1507 questionnaires. [Plus 10 firms for the pilot study]

⁹² Expectation Maximisation (EM) algorithm in IBM SPSS was used in performing the MCAR test.

Also, the extent of missing data per manifest variable was analysed, to identify those with > 5% missing values. As the analysis did not identify any such indicators (see Table 5.4.2 - Appendix C), mean value replacement was used in estimating the coefficients (Hair et al. 2014). It is worth noting that although missing data were MCAR, the expectation maximisation algorithm in SPSS was not used to impute the missing values because Hair et al. (2014) contend that there is scarcity of knowledge regarding their appropriateness when applying PLS-SEM.⁹³

[INSERT TABLE 5.4.2 ABOUT HERE]

5.2.8 Normality of Data Distribution

Although PLS-SEM has soft data distribution requirements, it is important to establish that there are no extreme values (i.e. outliers) that could bias the parameter estimates produced by PLS-SEM. As any type of empirical analysis can be significantly impacted by outliers, it is important to assess the fit of sample data with the statistical assumption relevant to the desired multivariate technique before application of such a technique (Hair et al. 2010).

Outliers are data that completely differ from other observations (Marko and Mooi 2014), or response(s) that are extreme to question(s) (Hair et al. 2014). In order to identify values that were outliers, IBM SPSS was used to calculate skewness and kurtosis of the dataset - two measures of distribution that are appropriate in determining the normality of data when using PLS-SEM (Hair et al. 2014). Because there are a number of mediating latent constructs in the structural model, with each construct having multiple indicators, outliers could not be determined based on the relationship (correlation) between the independent variable(s) and the dependent variable. Thus, the univariate method was used to calculate skewness and kurtosis of individual variables, and the box-plots used to detect observations that were outliers.

⁹³ While the Expectation Maximisation algorithm in IBM SPSS was used to determine that the missing values were MCAR, the mean value replacement of missing values was performed by the PLS-SEM software (i.e. SmartPLS) used in testing the hypotheses. For use of PLS-SEM in analysing data for this research, see section on choice of SEM methodology.

The results of the test show that some of the 51 variables have skewness and kurtosis that are greater than +1 or less than -1, indicating that the data are negatively skewed and kurtotic. Table 5.5 shows the skewness and kurtosis for variables with skewness and kurtosis $> +1$ or < -1 . In Figure 5.1: Q-Q plots of some of the skewness & kurtosis for some of the manifest variables are shown (see Appendix C).

[INSERT FIGURE 5.1 ABOUT HERE]

Table 5.5: Variables that are skewed and/or kurtotic

Manifest Variables		Statistic	Std. Error
SL_03	Mean	5.60	0.068
	Skewness	-1.342	0.140
	Kurtosis	1.932	0.279
LE_02	Mean	6.04	0.053
	Skewness	-1.470	0.140
	Kurtosis	3.930	0.279
...
LE_09	Mean	5.90	0.057
	Skewness	-1.461	0.140
	Kurtosis	3.441	0.279
AM_06	Mean	5.69	0.054
	Skewness	-0.998	0.140
	Kurtosis	2.674	0.279

As shown in Table 5.5 above, although the variables are negatively skewed, most of the skewness is close to -1, with only variable (LE_08) having skewness of -1.659. Also, although the kurtosis for the variables is $> +1$, it is argued that the kurtosis for a normal univariate distribution is 3 (Kim and White 2003). Thus, only three variables (LE_02 (Kurtosis = 3.930), LE_08 (kurtosis = 3.683), LE_09 (kurtosis = 3.441)) exhibit kurtosis > 3 , and in line with Kim and White (2003), these values could be described as mildly skewed. Although these three variables could be considered extreme, it was not deemed necessary to eliminate them from the study considering their relevance resulting from the heterogeneity of the client base (diversity of firms and industries) served by SMPs. Marko and Mooi (2014) posit that while there will always be observations with extreme values in a number of

variables, it is important that only outliers that exhibit true distinctiveness should be identified.

To ensure generalizability of results to the entire population, outliers that could be explained should be retained since they are a representative part of the population (Marko and Mooi 2014; Hair et al. 2010). Any impact of outliers on the results of the analysis meticulously assessed by running two separate analyses – with and without outliers (Marko and Mooi 2014). Where outliers cannot be clearly explained but are representative of a valid element of the population, they should be retained (Marko and Mooi 2014; Hair et al. 2010), because while multivariate analysis may be improved by deleting outliers, generalizability may be limited (Hair et al. 2010).

The extent of the non-normality of data distribution and the sample size should be reviewed since the extent of non-normality is influenced by both factors (Hair et al. 2010). In small sample sizes (< 50 observations), normality can have significant impact; however, when sample sizes attain 200 observations or more, the impact is effectively diminished (Hair et al. 2010). Therefore, any effect that may result from non-normality of data is significantly diminished, considering the use of a sample size that exceeds 300. Although large sample size increases the probability of a model being rejected due to minor and non-relevant aspects, it increases the likelihood of a parameter estimate deviation from zero not being due to sampling variation, increases the chance to detect misspecification of model, and reduces the confidence interval of the model's parameter estimates (Henseler, Hubona, and Ray 2016).

In deciding whether to exclude or retain an outlier, its characteristics and the objective of the analysis should be considered (Hair et al. 2010). In this regard, PLS-SEM is a nonparametric statistical method, and its bootstrapping procedure is robust with non-normal data (Henseler, Hubona, and Ray 2016; Hair et al. 2014; Chin, Marcolin, and Newsted 2003) and with small to medium sample sizes (Chin, Marcolin, and Newsted 2003).

5.3 NON RESPONSE BIAS

The extent to which subjects included in the sample do not provide usable response and are different from respondents on the characteristics of interest in the study determine the existence of nonresponse error (Dooley and Lindner 2003). Because the occurrence of

nonresponse errors renders invalid conclusions drawn and recommendations made on the basis of responses from participants (Dooley and Lindner 2003), the generalisation of research findings obliges researchers to ensure results would be same if a 100% response was achieved (e.g. Miller and Smith 1983; Armstrong and Overton 1977). Extrapolation which consists of comparisons between early and late respondents, and conducted over a period of time or a number of waves in a study, can be used to estimate the effects of nonresponse in that study (Collier and Bienstock 2007). This is because participants who do not initially respond to a survey are liken to non-respondents (Pace 1939).

The most appropriate method that allows for adequate comparison of early and late respondents (extrapolation) to determine the existence of nonresponse error in a survey would be to compare the first 25% to the last 25% of the sample (Collier and Bienstock 2007; Armstrong and Overton 1977). Collier and Bienstock (2007) support the use of the last 25% of respondents, arguing that it is a better representation of non-respondents than splitting the sample into equal parts – first half and second half, as posited by Lindner, Murphy, and Briers (2001). Thus in this study, the first 25% respondents were compared to the last 25% respondents in order to determine the existence of any nonresponse error.

In performing this extrapolation, an independent samples t-test (two-tailed) was applied, with the first 25% as early respondents, and the last 25% as late respondents. The test was conducted on a latent construct by latent construct basis, which meant comparing the latent constructs in the early respondents group to the latent constructs in the late respondents group.⁹⁴ The results of Levene's test for the equality of variances are insignificant, showing that the variance of score for the two groups is the same. The results of the t-test for equality of means illustrate that at $\alpha = 0.05$ (significance = 0.05) the two groups have no significant differences. This demonstrates that the survey is not affected by nonresponse bias (error). These results are displayed in the Table 5.6 below:

⁹⁴ Since each latent construct had multiple indicators (measurement items), the score for each construct in the early respondent group and the late respondent group was obtained by averaging the score (on the Likert scale) of the indicators for each respondent per respondent group.

Table 5.6: Independent Samples T-Test

	Levene's Test for Equality of Variances		t-test for Equality of Means	
	F	Sig.	t	Sig. (2-tailed)
ENVIRONMENT	1.474	0.227	0.376	0.707
STRATEGIC LEADERSHIP	0.229	0.633	-0.435	0.665
ALLIANCES & NETWORKS	3.625	0.059	-1.329	0.186
LEARNING	1.524	0.219	-1.766	0.079
AMBIDEXTERITY	1.722	0.191	-0.657	0.512
INNOVATIVENESS	0.178	0.673	0.249	0.804
PERFORMANCE	1.742	0.189	-0.722	0.472

5.4 COMMON METHOD BIAS

The specific procedural approaches adopted for minimising potential common method bias in this study were detailed earlier (see Chapter 4). These methods included scale improvement through pre-testing, pilot study, post pilot study interview, covering letter, counterbalancing order of items, explanation of importance and relevance of the study to the industry and information on how the data will be used. However, it is important the actual data collected be tested for common method bias. As there is no single method that is best for dealing with issues of common method variance (CMV), the chosen procedural and statistical remedies should be appropriate to the specific research questions (Podsakoff et al. 2003), in order that the plausibility [probability] of method biases as competing explanation for observed relationships in the study is decreased (Podsakoff, MacKenzie, and Podsakoff 2012).

Therefore considering the data relating to the independent and dependent variables were collected from the same source, the Harman's single factor approach (Harman 1976) was adopted, to statistically test for the existence of common method bias. Using IBM SPSS 24, the principal component analysis shows a value of 35.3% (far below the 50% threshold), demonstrating that inter-item correlations are not solely influenced by common method variance.

5.5 USE OF STRUCTURAL EQUATION MODELLING (SEM)

In outlining the methodology applied in this research (see Chapter 5), the case for the choice of statistical method, SEM, was advanced. In this section, the various SEM methodologies are outlined, and the specific SEM methodology used in analysing the data is identified and justified.

5.5.1 SEM Methodologies

SEM, a multivariate data analysis technique, can test linear and additive causal models supported by theory (Statsoft 2017). Different approaches to SEM are: covariance-based (CB-SEM), variance-based partial least squares (PLS-SEM), component-based generalised structured component analysis (GSCA-SEM), and Nonlinear Universal Structural Relational Modelling (NEUSREL-SEM) (Wong 2013). Considering these different approaches to path modelling, it is important to briefly identify the contextual application of each approach.

(i) CB-SEM:

CB-SEM is a Maximum Likelihood (Jöreskog 1970) estimation technique aimed at using the model parameters to estimate the model coefficients, so as to reproduce the covariance matrix of the indicator variables. Data analysis with CB-SEM is applied in confirming or rejecting theories through testing of hypothesis, typically when the model is correctly specified, the data is normally distributed, and the sample size is large (Hair, Ringle, and Sarstedt 2011; Reinartz, Haenlein, and Henseler 2009). Practically, however, to find a dataset that fulfils these requirements is often difficult.

(ii) PLS-SEM:

PLS causal modelling technique to SEM (Hair, Ringle, and Sarstedt 2011) makes no assumptions regarding data normality (Vinzi et al. 2010). It could be applied when sample size is small and data distribution is non-normal. PLS-SEM is a suitable alternative to CB-SEM (Hwang et al. 2010; Bacon 1999).

(iii) GSCA-SEM and NEUSREL-SEM:

GSCA-SEM approach is preferable in projects which require overall measures of model fit, or where non-linear latent variables have to be accommodated (Hwang et al. 2010). The NEUSREL-SEM approach could be applied to datasets with significant nonlinearities and moderation effects among variables (Buckler and Hennig-Thurau 2008). GSCA-SEM and NEUSREL-SEM are relatively new techniques, with limited amount of literature (Wong 2013).

5.5.2 Choice and Justification of SEM Methodology

In selecting the SEM methodology appropriate for this research, consideration was given to the requirements of normality of data, sample size, methodological characteristics, model quality and accuracy of parameters estimation between CB-SEM and PLS-SEM approaches. This underscores the importance to assess the fit of sample data with the statistical assumption relevant to the desired multivariate technique before application of such a technique (Hair et al. 2010). This analysis is limited to a comparative decision between CB-SEM and PLS-SEM, cognisant that GSCA-SEM and NUESREL-SEM are relatively new approaches.

5.5.2.1 Sample Size, Data Normality and Estimation

When the assumption of a multivariate normality of data and reasonable sample size are violated, the Maximum Likelihood (ML) estimation used in CB-SEM produces means and covariance matrix that do not represent all the information (Crisci 2012), with results that can be significantly imprecise (Hair, Ringle, and Sarstedt 2011). Thus, only when those assumptions of normality are satisfied does ML produce efficient and unbiased estimates (Hair et al. 2010). However, where such assumptions cannot be met, variance-based PLS-SEM approach is preferable, considering the more robust estimations of the structural model that it produces (Reinartz, Haenlein, and Henseler 2009). For instance, due to its soft distributional assumptions, PLS-SEM can be used in highly skewed data (Bagozzi 1993), or in observations with no assurance of independence (Henseler, Ringle, and Sinkovics 2009).

Furthermore, PLS-SEM approach yields consistent estimation outcomes although it demands significantly fewer requirements than CB-SEM, making it a valuable technique for theory testing (Peng and Lai 2012; Gotz, Liehr-Gobbers, and Krafft 2010; Chin, Marcolin, and Newsted 2003). However, assumptions about sample representativeness are not less stringent in PLS path modelling (Henseler, Ringle, and Sinkovics 2009). Therefore, the less restrictive distributional assumption of PLS-SEM path modelling gives it an edge over CB-SEM analysis, when dealing with small samples or complex procedures (Lowry and Gaskin 2014). With non-normal data, goodness-of-fit statistics may be inflated and standard errors underestimated in CB-SEM (MacCallum, Roznowski, and Necowitz 1992). Larger sample sizes could reduce such effects (Lei and Lomax 2005), however, considering that even the adequate minimum sample size requirement necessary for CB-SEM to be applied in this study could not be fulfilled, the CB-SEM approach couldn't be adopted.

In CB-SEM, the rules of thumb for determining adequate sample size include having minimum number of observations ranging from 5 (Tanaka 1987) to 20 (Bentler and Chou 1987) times the number of parameters estimated. This implies that for 150 parameters⁹⁵ estimated for this study, a minimum of 750 observations are required for an adequate sample size. However, this is larger than the actual number of observations ($N = 315$) obtained for this study. With PLS-SEM, the rule of thumb for determining the adequate requirement for minimum sample size suggests a sample size of 10 times the endogenous construct that is influenced by the largest number of independent variables (Peng and Lai 2012). Although there is also need to calculate the statistical power for adequate sample size in both CB-SEM and PLS-SEM methods (Peng and Lai 2012), the actual number of observations obtained in this study ($N = 315$) is far greater than the minimum sample size of 40 (largest number of independent variables influencing, i.e. maximum number of arrows point at, a dependent variable is 4). Therefore, while the actual sample size does not meet the minimum sample size requirement for CB-SEM, it does exceed the minimum requirement for PLS-SEM (based on the 10 times rule, $4 * 10 = 40$ observations required). The obtained sample being large under PLS-SEM, it is expected to yield high statistical power.

⁹⁵ This figure (150 parameters) was obtained using the IBM AMOS 24 software. It was obtained after constraining many parameters without which the figure would have been bigger than 150.

5.5.2.2 Model Complexity and Quality Evaluation

With PLS-SEM the explained variance in the dependent variable is maximised and the data quality on the basis of measurement model characteristics is evaluated (Hair, Ringle, and Sarstedt 2011). PLS-SEM can deal with a wider range of issues than CB-SEM, considering its soft assumptions about the data, and its ability to operate efficiently with increasingly complex models as well as with a wider range of sample sizes (Hair, Ringle, and Sarstedt 2011). Moreover, the chosen discrepancy function and the model complexity may require hundreds or thousands of observations in CB-SEM (Boomsma and Hoogland 2001). In CB-SEM, as the model complexity with associated number of items increase, with 50 or more indicators, the chance of obtaining poor model fits increases (Chin 2010). Explained further, by increasing the number of indicators per construct, the bias in parameter estimate for reflective constructs in PLS is reduced; however, as the number of indicators increases, the minimum sample size requirement is increased in CB-SEM (Peng and Lai 2012). Therefore, with the number of indicators per reflective construct in the research model ranging from 4 to 13,⁹⁶ PLS was more appropriate to use in analysing the research data.

As in CB-SEM analysis, application of PLS algorithm demands an elaborate model evaluation, to demonstrate its appropriateness in describing the effects between the constructs being investigated (Gotz, Liehr-Gobbers, and Krafft 2010). Because PLS-SEM and CB-SEM produce practically the same results when good measures and data are used, differences in results between both methods could be attributed to measurement model quality (Hair, Ringle, and Sarstedt 2011).

Adequate sample size determination in CB-SEM, but not necessarily in PLS-SEM, is directly influenced by overall complexity of the research model. Considering that this study's theoretical model includes moderation and mediation analyses, higher-order constructs (multiple endogenous constructs), the use of PLS-SEM was deemed appropriate since the existence of these aspects in a model increases the number of parameter estimates, resulting in convergence and model identification issues in CB-SEM (Peng and Lai 2012).

Therefore, considering the constraints posed by sample size, data normality, data estimation and model complexity, PLS-SEM method is the better option and choice in the context of this study.

⁹⁶ These are the number of indicators prior to model refinement.

5.5.3 Choice of PLS-SEM Software – SmartPLS Software

A number of PLS-SEM software applications are available. However, the software chosen and used to analyse data in this research is SmartPLS. The choice was influenced by the capability of SmartPLS software (Ringle, Wende, and Becker 2015) in SEM, to determine both the direct and indirect path effects amongst all latent constructs that belong to a nomological network (Glocker 2012).

Furthermore, in addition to the ease of its use, SmartPLS' capability to estimate the importance-performance matrix for various latent constructs was important in the choice of software, considering the later analyses of research data for managerial decision making, as well as the expected impact, in industry, of the results of this research. This is in line with the objectives of this research, in addition to expectation evident by interests expressed by many respondents to the survey, who explicitly indicated their desire to receive a summary report of the study's findings.

5.6 VALIDATION OF THE THEORETICAL RESEARCH MODEL

In assessing the quality criteria of the conceptual model employed in this study, both the measurement and structural models have been evaluated. It is important to validate measures prior to theory testing since measurement errors (random errors and method variance) pose potential threats to the validity of research results (Bagozzi, Yi, and Phillips 1991). Parameters for the measurement and structural models were estimated by applying the PLS Algorithm procedure with SmartPLS. The details of the evaluation of the initial research model are included in Appendix G.

In the following sections, the refined model is evaluated and discussed as this is relevant to the testing of the hypotheses. In the tables presenting the statistics relating to the parameter estimates, each construct in the research model has been used interchangeably with a specific code as follows:

Research Model Constructs	Code1	Code2
Strategic Leadership	SL_ED	Strat_Lead
Organisational Learning	OG_LE	Learning
Alliances & Networks	A_NET	All_Net
Ambidexterity	AM_BI	Ambidex
Innovativeness	IN_NO	Innovate
Performance	PE_RF	Perf

The refined research model is presented in Figure 5.2 below.

Figure 5.2: Results of Path Coefficients Estimates for refined Research Model

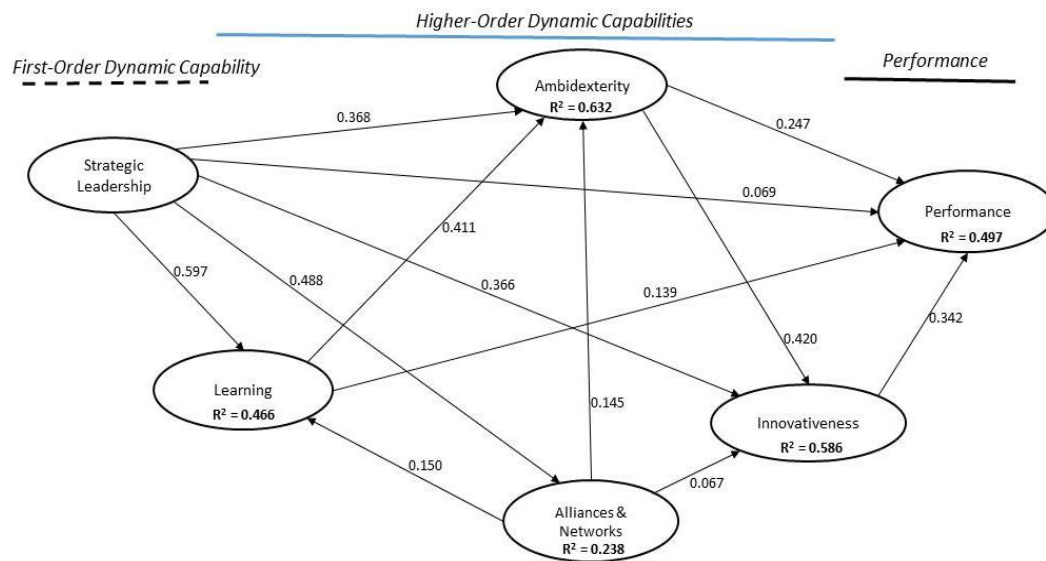


Figure 5.2: Results of path coefficients estimates for refined model

The model in Figure 5.2 above shows the parameter estimates for the refined model.

Following the removal of the indicators mentioned in the preceding paragraph, the following statistics were obtained for measurement model:

5.6.4.1 Indicator Reliability

The part of an indicator's variance that can be explained by the underlying latent variable is the indicator reliability (Gotz, Liehr-Gobbers, and Krafft 2010). Each indicator's absolute standardised loading should be higher than 0.70; however, indicators with loadings between 0.4 and 0.7 should only be considered for removal from the scale if construct reliability would be improved by their removal (Hair, Ringle, and Sarstedt 2011). Indicator reliability can also be determined by calculating the square root of each indicator loading. With this method, the minimum acceptable indicator reliability level is 0.4, and 0.7 is preferred (Wong 2013).

The absolute standard loading of each indicator should be higher than 0.7, with loadings of between 0.4 and 0.7 considered for omission only if such removal improves construct validity (Hair, Ringle, and Sarstedt 2011). Of the final 39 indicators, 32 have standardised loadings > 0.7. There are 7 indicators with standardised loadings > 0.6 but < 0.7. These indicators are AM_04 (loading = 0.681), AN_02 (loading = 0.686), LE_01 (loading = 0.661), LE_05 (loading = 0.613), LE_07 (loading = 0.651), SL_04 (loading = 0.618), SL_11 (loading = 0.618). However, most of these loadings were very close to 0.7 and, thus, considered acceptable. Also, the loading² of each indicator was also used to determine its reliability. Using this method, 36 of the 39 have indicator reliability > 0.4. The 3 indicators with loading² < 0.4 are LE_05 (loading² = 0.375), SL_04 (loading² = 0.382), SL_11 (loading² = 0.382). In addition to the fact that the values are close to 0.4, these indicators were retained in order to enhance content validity. Furthermore, in removing such observed variables, consideration was given to the trade-off among content validity, consistency, reliability and AVE as recommended by Ping (2004). See Table 5. 7: Indicator Reliability and Validity - Refined Model. [See Appendix D]

[INSERT TABLE 5.7 ABOUT HERE]

5.6.4.2 Internal Consistency Reliability (Construct Reliability)

When indicators belonging to the same latent construct exhibit a high mutual correlation, construct reliability is said to be established. This is because it is important that a latent construct be adequately measured, jointly, by all its indicators (Bagozzi and Baumgartner 1994).

Composite reliability values are used to evaluate the degree to which manifest variables measure a latent construct to which they are assigned (Gotz, Liehr-Gobbers, and Krafft 2010). Composite reliability values for all constructs are shown to be higher than 0.8. Since in more advanced stages of research, a composite reliability value of 0.7 to 0.9 is considered satisfactory (Nunnally and Bernstein 1994), the values obtained in this study demonstrate internal consistency reliability among all (reflective) latent constructs. The composite reliability values for the constructs are shown in Table 5.7 (also see Table 5.8).

5.6.4.3 Construct Validity

Construct validity, made up of convergent and discriminant validity (Campbell and Fiske 1959), is the extent to which a measurement item (an indicator or observed variable) measures the construct it is intended to measure (Bagozzi, Yi, and Phillips 1991). A meaningful interpretation of the estimated strengths of the relationship especially between latent constructs requires that construct validity be established (Peter and Churchill 1986). Although validity is not constrained by reliability in latent variable analyses since latent variable models with each construct having multiple measures circumvent (avoid) the problem of low reliability resulting from high measurement error (Cunningham, Preacher, and Banaji 2001), failure to evaluate construct validity may lead to rejection or acceptance of a hypothesis not necessarily because of adequacy or inadequacy in theory, but rather due to excessive measurement error (Bagozzi, Yi, and Phillips 1991), resulting in Type I or Type II error. Because various sources account for threats to construct validity, it is important that different methods of assessing construct validity be employed in a study (Henseler, Ringle, and Sarstedt 2015).

5.6.4.3.1 Convergent Validity

Convergent validity is the degree to which multiple measures designed to measure the same construct correlate (covary) with each other (Cunningham, Preacher, and Banaji 2001; Bagozzi, Yi, and Phillips 1991). Convergent validity, established when multiple measures of the same concept are highly correlated, provides evidence that these measures potentially demonstrate the same underlying concept although they are obtained by multiple methods (Bagozzi 1993). In this study, the Average Variance Extracted (AVE) was assessed in order to ascertain the establishment of convergent validity.

AVE is the average amount of variation in indicator variables that is explained by a theoretically related latent construct (Henseler, Ringle, and Sarstedt 2015; Farrell 2010). Evaluation of the AVE values shows all the latent constructs with AVE values larger than the acceptable threshold of 0.5. Therefore, convergent validity was confirmed for all latent constructs. These values are shown in the Table 5.8. (Also see Table 5.7)

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Alliances & Networks	0.743	0.799	0.833	0.556
Ambidexterity	0.878	0.881	0.905	0.577
Innovativeness	0.890	0.891	0.914	0.604
Learning	0.870	0.877	0.898	0.528
Performance	0.873	0.891	0.904	0.612
Strategic Leadership	0.840	0.847	0.880	0.514

Table 5.8: Construct Reliability & Validity

5.6.4.3.2 Discriminant validity

Discriminant validity is the extent to which measures [observed variables or indicators] of different and unique concepts are distinct (and do not highly correlate) (Bagozzi, Yi, and Phillips 1991). It is the difference in a measurement tool's measurement of various constructs, achieved when the shared variance between a latent construct and its manifest variables is larger than the variance shared with other latent constructs in the same model (Hulland 1999; Fornell and Larcker 1981). Therefore, discriminant validity implies a latent construct accounts for more variance in its observed variables than measurement error or other constructs in the conceptual model (Farrell 2010). This ensures the empirical uniqueness (and representation of phenomena of interest) of a construct's measure as opposed to other constructs within the conceptual framework (Hair et al. 2010). If discriminant validity is not satisfied/established, the validity of the individual indicators and of the construct becomes questionable (Fornell and Larcker 1981), and incorrect conclusions may be drawn regarding relationships between constructs being investigated (Farrell 2010). A number of studies have employed two methods – Fornell-Larcker criterion (1981) and indicator cross-loadings to assess discriminant validity (e.g. Nicolaou, Sedatole, and Lankton 2011; Hall 2008). However, it is argued that employing only those two methods does not provide sufficient

assurance on whether or not discriminant validity is satisfied (Henseler, Ringle, and Sarstedt 2015). Therefore, three different methods – indicator cross-loading, Fornell-Larcker criterion (1981), and Heterotrait-Monotrait (HTMT) ratio (Henseler, Ringle, and Sarstedt 2015) – have been used in this study to evaluate discriminant validity.

i) Fornell-Larcker criterion (1981)

The square root of each latent construct's AVE can be used to determine discriminant validity, which is established when the square root of a construct's AVE is larger than its correlation with other latent constructs (Henseler, Ringle, and Sarstedt 2015; Fornell and Larcker 1981).

The correlation between each latent construct and itself is larger than its correlation with other latent constructs. Thus discriminant validity is established for all latent constructs. These correlations are indicated in the Table 5.9 below:

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Table 5.9: Fornell-Larcker criterion (1981) for refined model

As shown in the table above, the figures in the diagonal represent the correlation of each latent construct with itself (that is, the square root of its AVE), while the other figures are the correlations among the latent constructs.

ii) Indicator Cross-Loadings

Indicator cross-loading could be assessed in order to determine discriminant validity. This is established when a measure is able to discriminate that it belongs to the construct it is modelled to measure rather than to another construct, that is, each indicator loadings should

be larger than all of its cross-loadings (Chin 2010; Chin 1998). See Table 5.10 below and table 5.10a (in Appendix D).

INDICATORS	A_NET	AM_BI	IN_NO	OG_LE	PE_RF	SL-ED
AM_01	0.479	0.769	0.522	0.579	0.494	0.591
AM_02	0.455	0.752	0.676	0.514	0.496	0.605
AM_03	0.429	0.743	0.665	0.476	0.443	0.564
...
SL_07	0.360	0.501	0.442	0.548	0.379	0.733
SL_08	0.323	0.540	0.536	0.459	0.379	0.753
SL_10	0.328	0.520	0.635	0.472	0.484	0.782
SL_11	0.385	0.458	0.406	0.442	0.349	0.618

Table 5.10: Indicator cross-loadings for refined model Indicator cross-loadings for refined model

As shown in in Table 5.10 above, the loading of each indicator on its latent construct is larger than its loadings on other latent constructs, thus validating the indicator cross-loading criteria.

iii) **Heterotrait-Monotrait (HTMT) Ratio**

In addition to Fornell-Larcker criterion (1981) and indicator cross-loading, Henseler, Ringle, and Sarstedt (2015) recommend the use of HTMT ratio in establishing discriminant validity. HTMT ratio is an estimate of the correlation between two constructs in a nomological model (Netemeyer, Bearden, and Sharma 2003). An HTMT value that is clearly smaller than 1 indicates that the two constructs should differ as the true correlation between them is most probably different from 1 (Henseler, Ringle, and Sarstedt 2015). Using the criterion approach, discriminant validity is established when HTMT ratio is less than the threshold value of 0.90 (Teo, Srivastava, and Jiang 2008; Gold, Malhotra, and Segars 2001) or less than the threshold value of 0.85 (Kline 2011).

Heterotrait-Monotrait (HTMT) Ratio

	Alliances & Networks	Ambidexterity	Innovativeness	Learning	Performance
Alliances & Networks					
Ambidexterity	0.595				
Innovativeness	0.517	0.798			
Learning	0.512	0.819	0.635		
Performance	0.412	0.714	0.704	0.620	
Strategic Leadership	0.566	0.827	0.793	0.787	0.648

Table 5.11: HTMT Ratios for latent constructs

As shown in Table 5.11 above, the HTMT ratios for each pair of constructs is less than 0.85, confirming the validation of the HTMT criterion for the model.

5.6.5 Evaluation of significance of Measurement Model Loadings

The *T*-statistics for all loadings in the outer model are larger than 2.57 ($\alpha = 0.01$). Therefore it can be concluded that the measurement model loadings are highly significant. These *t* values are shown in Table 5.12 below.

Table 5.12: T-Statistics for Outer Loadings

Indicators	AM_BI	A_NET	PE_RF	IN_NO	OG_LE	SL_ED
AM_01	30.213					
AM_02	25.990					
AM_03	27.757					
AM_04	18.034					
...
SL_06						17.626
SL_07						23.806
SL_08						27.216
SL_10						33.291
SL_11						13.585

All the outer loadings are significant at 0.001.

The complete statistics (Means, STDEV, T-Values and P-Values) of the outer loadings are shown in Table 5.12a (see Appendix D).

[INSERT TABLE 5.12a ABOUT HERE]

5.6.6 Evaluation of the Structural Model

5.6.6.1 PLS-SEM Bootstrapping

‘Having established the appropriateness of the measures, the next step is to provide evidence supporting the theoretical model as exemplified by the structural portion of the model’ (Chin 2010: 674). The parameter estimates for the structural model will enable an analysis of the variance explained in each dynamic capability construct, and in determining the significance of each path coefficient.

Discussion of the evaluation of the structural model of the research is conducted as follows: bootstrapping procedure for producing relevant parameter estimates; coefficient of determination; path coefficients and their statistical significance; significance of outer model loadings; effect size; effects of moderating variables; and predictive relevance of the model.

While the path coefficients, coefficient of determination (R^2), and effect size (f^2) of the model are estimated by PLS algorithm, the parameters estimates for determining their statistical significance are produced by applying PLS bootstrapping procedure.

5.6.6.2 Evaluation of the Predictive Power of the Structural Model

Following the testing of the full model and establishment of the nomological validity of the model, the predictive power of the model is then evaluated, to determine the degree to which the variance in the dependent (and endogenous) variable(s) are explained by the independent (predictor) variables. This is demonstrated by the path coefficients and coefficient of determination (R^2) of the model (Lowry and Gaskin 2014). In prediction-oriented PLS-SEM approach, the objective is to explain the variance of the endogenous (dependent) latent variables (Peng and Lai 2012; Hair, Ringle, and Sarstedt 2011). The R^2 values of the endogenous constructs signify the predictive power of the structural model (Peng and Lai 2012; Chin 2010), because the latent variables are determined by weight relations (Chin 2010).

5.6.6.2.1 Coefficient of Determination (R^2) of the Structural Model

Although its acceptability depends on the specific study, larger R^2 indicates a larger percentage of variance explained (Gotz, Liehr-Gobbers, and Krafft 2010). For instance, while R^2 value of 0.2 are considered high in some disciplines (e.g. consumer behaviour), in other studies (e.g. success driver studies) R^2 value of 0.75 would be seen as high (Hair, Ringle, and Sarstedt 2011). That said, an important predictive power of a PLS model is demonstrated with a high R^2 as well as substantiated and significant path coefficients, with R^2 values of 0.67, 0.33, 0.19 indicating substantial, moderate and weak effects, respectively (Chin 1998), and standardised paths close to 0.20 or higher considered substantial, indicating a meaningful predictive power of the model (Lowry and Gaskin 2014). However, even small but significant interaction terms in a model are important (Chin, Marcolin, and Newsted 2003). R^2 being the percentage of explained variance in the dependent variable, the R^2 values indicate that the following variances can be explained:

SMP Performance

$R^2 = 0.497$ (R^2 adj = 0.490), and $t = 12.570$ ($df = 4999$) for performance – the dependent latent construct. This implies that the five latent constructs (strategic leadership, learning, alliances & networks, ambidexterity, and innovativeness moderately explain 49.7% of the variance in SMP performance, and is statistically highly significant. Considering that an R^2 of 0.33 indicates a moderate predictive power of a model, the results ($R^2 = 0.497$) show that the research model exhibits a highly moderate predictive power for SMP performance. Also, for the four DCs constructs (ambidexterity ($\beta = 0.247$, $t = 3.466$); strategic leadership ($\beta = 0.069$, $t = 1.001$); learning ($\beta = 0.139$, $t = 2.121$); and innovativeness ($\beta = 0.342$, $t = 5.494$)) with direct path relationship to (influence on) SMP performance, innovativeness has the largest direct and positive effect on performance (innovativeness \rightarrow performance: $\beta = 0.342$).⁹⁷ See Fig 7.4, Tables 7.17 and 7.18.

Organisational Learning

$R^2 = 0.466$ (R^2 adj = 0.463), and $t = 10.897$ ($df = 4999$) for the endogenous latent construct learning, implying that the latent constructs of strategic leadership, and alliances & networks

⁹⁷ These are the direct effects only, which are different from the total effects (total effect = direct effects + indirect effects).

moderately explain 46.6% of the variance in SMP learning. Statistically, this R^2 value is highly significant. See fig 5.3, and tables 5.19 and 5.20. Also see Fig 5.2 and Tables 5.13 & 5.14.

SMP Innovativeness

$R^2 = 0.586$ (R^2 adj = 0.582), and $t = 15.483$ ($df = 4999$) for the endogenous latent construct innovativeness, indicating that the latent constructs: strategic leadership, alliances & networks, and ambidexterity moderately explain 58.6% of the variance in SMP innovativeness. Statistically significant at $\alpha = 0.001$, the high R^2 value (0.586) indicates the substantial change (58.6%) in SMP innovativeness that could result from the direct combined effects of the first-order DCs construct of strategic leadership, and higher-order DCs constructs of alliances & networks, and ambidexterity. These three DCs with direct influence on SMP innovativeness in the research model exhibit the following parameter estimates: strategic leadership ($\beta = 0.366$, $t = 7.001$); ambidexterity ($\beta = 0.420$, $t = 6.636$); and alliances & networks ($\beta = 0.067$, $t = 1.255$). These results show that ambidexterity has the largest direct impact on SMP innovativeness, with strategic leadership and alliances & networks also contributing to SMP innovativeness. This is expected, considering that ambidexterity involves the exploration of new knowledge which is an essential ingredient for innovativeness. This is consistent with Doving et al. (2004) and Gooderham and Doving (2008) who contend that diversification and the breadth of services provided by a firm are influenced by its strategic intent, development of human capital and alliances. Blackburn and Jarvis (2010) argue that the range of services provided by a SMP could be increased if accountants become multidisciplinary and knowledge professionals rather than technicians in accounting. See Fig 5.2, Tables 5.13 and 5.14.

Ambidexterity

$R^2 = 0.632$ (R^2 adj = 0.629), and $t = 17.415$ ($df = 4999$) for the endogenous latent variable ambidexterity, which implies the latent variables strategic leadership, learning, and alliances & networks explain 63.2% of the variance in SMP ambidexterity. This amount of variance explained by the latent variables could be considered substantial, cognisant that it is close to the 0.67 threshold indicated by Chin (1998). The implication is that 63.2% of variation in SMP ambidexterity could be predicted by effects of DCs constructs of strategic leadership, alliances & networks, and organisational learning. Of these three DCs, the parameter

estimates for the direct path relationship between each dynamic capability construct and SMP ambidexterity are: strategic leadership ($\beta = 0.368$, $t = 7.664$); learning ($\beta = 0.411$, $t = 9.008$); alliances & networks ($\beta = 0.145$, $t = 3.520$). These show that the largest direct effect on ambidexterity is from SMP's organisational learning. See Fig 5.2, Tables 5.13 and 5.14.

Alliances & Networks

$R^2 = 0.238$ (R^2 adj = 0.235), and $t = 5.451$ ($df = 4999$) for the endogenous latent variable alliances & networks, indicating that the latent construct strategic leadership explains 23.8% of the variance in SMP alliances & networks. Also, the results of the parameter estimates for the path relationship between strategic leadership and alliances & networks show that the predictive power of strategic leadership on alliances & networks is statistically significant at $\alpha = 0.001$ (path coefficient: $\beta = 0.488$, $t = 10.929$). Although the R^2 value of 0.238 shows that the amount of variance explained is slightly above the threshold of 0.19 described by Chin (1998), it could be explained by the fact that it is influenced by only one latent construct – strategic leadership. Furthermore, the almost weak effect of strategic leadership on alliances & networks suggest that SMPs may not have reported their informal alliances & networks. This could have been because one of the four questions relating to alliances & networks in the survey asked whether collaborative agreements with other firms for the provision of complementary services were in place. This implied a formal agreement, however, findings from the qualitative part of this study indicate the existence of informal alliances & networks, for the most part, especially in respect of the micro SMPs (with 1-9 employees). See Tables 5.13 and 5.14.

The R^2 values of all the endogenous latent constructs are statistically highly significant. These R^2 values and their t statistics are shown in Table 5.13 and Table 5.14, respectively. Figure 5.2 also shows the path model with the R^2 values.

	R Square	R Square Adjusted
Alliances & Networks	0.238	0.235
Ambidexterity	0.632	0.629
Innovativeness	0.586	0.582
Learning	0.466	0.463
Performance	0.497	0.490

Table 5.13: R^2 Values of the structural model

As shown in Table 5.13 above, the dependent and endogenous (independent) variables exhibit high R^2 values, underlining the predictive power of the structural model.

Table 5.14: T-Statistics of the R^2 Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Alliances & Networks	0.238	0.243	0.044	5.451***	0.000
Ambidexterity	0.632	0.638	0.036	17.415***	0.000
Innovativeness	0.586	0.591	0.038	15.483***	0.000
Learning	0.466	0.471	0.043	10.897***	0.000
Performance	0.497	0.505	0.040	12.570***	0.000

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

As shown in the table above, the R^2 values of each dynamic capability construct in the structural model is statistically significant at $\alpha = 0.01$.

5.6.6.2.2 Size of Path Coefficients

The corresponding standard path coefficients can also be examined and interpreted in the same way as the R^2 (Chin 2010). In verifying the results of bootstrapping, the significance, magnitude and sign of path coefficients should be checked to ensure they are consistent with theory (Peng and Lai 2012). In this study, the bootstrapping results showing the standardized regression effects for the path coefficients of the latent constructs are: alliances & networks \rightarrow innovativeness ($\beta = 0.067$); alliances & networks \rightarrow ambidexterity ($\beta = 0.145$); alliances & networks \rightarrow learning ($\beta = 0.150$); ambidexterity \rightarrow innovativeness ($\beta = 0.420$); ambidexterity \rightarrow performance ($\beta = 0.247$); innovativeness \rightarrow performance ($\beta = 0.342$); learning \rightarrow ambidexterity ($\beta = 0.411$); learning \rightarrow performance ($\beta = 0.139$); strategic leadership \rightarrow alliances & networks ($\beta = 0.488$); strategic leadership \rightarrow ambidexterity ($\beta = 0.368$); strategic leadership \rightarrow innovativeness ($\beta = 0.366$); strategic leadership \rightarrow learning ($\beta = 0.597$); and strategic leadership \rightarrow performance ($\beta = 0.069$). Thus, the structural model suggests that the strongest effect is that of strategic leadership on learning, while the weakest effect is that of alliances & networks on innovativeness. The path coefficients are presented in Fig 5.2.

5.6.7 EVALUATION OF THE EFFECT SIZE, f^2 , OF THE STRUCTURAL MODEL

The effect size, f^2 (Cohen 1988), of the model is indicative of the extent of contribution by an exogenous (or predictor) latent construct to the R^2 value of an endogenous latent construct. Considering that f^2 refers to the basic population of analysis rather than to the sample (Gotz, Liehr-Gobbers, and Krafft 2010), it evaluates the magnitude of the relation [correlation] between latent constructs, as well as the overall contribution of the study (Wong 2013), calculated as an increase in R^2 relative to the remaining unexplained proportion of variance in the endogenous latent construct (Peng and Lai 2012). F^2 values of 0.02, 0.15, and 0.35 indicate a small, medium, or large effect, respectively, of the predictor variable at the structural level (Chin 2010; Cohen 1988). Because f^2 concerns the basic population and not just the sample, degrees of freedom are not considered (Gotz, Liehr-Gobbers, and Krafft 2010).

The hypothesised path relationship for alliances & networks \rightarrow ambidexterity has $f^2 = 0.017$ ($t = 1.653$), alliances & networks \rightarrow innovativeness has $f^2 = 0.004$ ($t = 0.538$), and alliances & networks \rightarrow organisational learning $f^2 = 0.033$ ($t = 1.358$). These values show that while the latent construct alliances & networks has small effect on the explained variance (R^2) in ambidexterity and learning, it has no effect on the R^2 of innovativeness.

The f^2 values are in line with the parameter estimates for the direct path relationships from alliances & networks to: organisational learning ($\beta = 0.150$), ambidexterity ($\beta = 0.145$), and innovativeness ($\beta = 0.067$), which show its steepest slope ($\beta = 0.150$) in the path relationship of alliances & networks \rightarrow learning. This implies that alliances & networks contribute more to organisational learning than to either ambidexterity or innovativeness. This is important as it highlights the difference in the endogenous construct's (alliances & networks) contribution although the path relationships of alliances & networks \rightarrow ambidexterity, and alliances & networks \rightarrow learning are both statistically significant at $\alpha = 0.01$ (i.e. $p < 0.01$).

The hypothesised path relationship for ambidexterity \rightarrow innovativeness has $f^2 = 0.310$ ($t = 2.812$), and ambidexterity \rightarrow performance has $f^2 = 0.023$ ($t = 1.646$). These values indicate that while the direct effect of ambidexterity on the R^2 of performance is small, it has a large effect on the R^2 of innovativeness. The extent of contribution by ambidexterity validates the results of the estimates for the path relationships: ambidexterity \rightarrow performance ($\beta = 0.247$), and ambidexterity \rightarrow innovativeness ($\beta = 0.420$), which show a comparatively steeper slope

for the relationship between ambidexterity and innovativeness. These results also emphasise the importance of a firm's ambidexterity to its innovativeness.

With $f^2 = 0.101$ ($t = 2.501$) for the path relationship of innovativeness \rightarrow performance, the latent construct innovativeness has an almost medium effect on the R^2 in the latent construct performance. Because three other dynamic capability constructs (strategic leadership, ambidexterity, and organisational learning) also make direct contributions to the R^2 in performance, the contribution from the firm's innovativeness is impacted. Therefore, the estimate for the degree of contribution made by the dynamic capability of innovativeness to the R^2 of SMP performance is not surprising.

Organisational learning \rightarrow ambidexterity has $f^2 = 0.204$ ($t = 3.801$) and learning \rightarrow performance has $f^2 = 0.011$ ($t = 0.964$). Thus, while the effect of learning on the R^2 in ambidexterity is above medium, its direct effect on the R^2 in performance is less than small. The path coefficients for learning \rightarrow ambidexterity ($\beta = 0.411$) and learning \rightarrow performance ($\beta = 0.139$) support the bigger contribution of organisational learning to the R^2 of ambidexterity, as well as its less than small contribution to SMP performance.

The hypothesised path relationship for strategic leadership \rightarrow alliances & networks has $f^2 = 0.398$ ($t = 4.013$), strategic leadership \rightarrow ambidexterity has $f^2 = 0.173$ ($t = 3.162$), strategic leadership \rightarrow innovativeness has $f^2 = 0.168$ ($t = 3.337$), strategic leadership \rightarrow learning has $f^2 = 0.705$ ($t = 4.703$), and strategic leadership \rightarrow performance has $f^2 = 0.003$ ($t = 0.397$). These f^2 values indicate a large effect of strategic leadership on the R^2 in alliances & networks, a small effect of strategic leadership on the R^2 in ambidexterity, a small effect of strategic leadership on the R^2 in innovativeness, a very large effect of strategic leadership on the R^2 in learning, and no direct effect of strategic leadership on the R^2 in performance.

The extent of strategic leadership's contributions to the R^2 of its dependent variables is reflective of the path coefficients of its relationships with those variables. Its largest contribution is to the R^2 of learning (path coefficient $\beta = 0.597$), with its smallest contribution to the R^2 performance ($\beta = 0.069$). The very large contributions of strategic leadership to the explained variance in organisational learning and in alliances & networks demonstrate that the influence is of high magnitude. This highlights the fact that the degree to which corporate alliances & networks are established, and the extent of organisational learning in a firm, are dependent on the SMP's strategic leadership.

Furthermore, the medium contribution of strategic leadership to the R^2 of the firm's innovativeness and its ambidexterity illustrate that contributions are also made to these higher-order DCs (ambidexterity and innovativeness) by DCs that have been deployed as a result of strategic leadership, as follows: (1) ambidexterity, and alliances & networks also contribute to the R^2 of innovativeness; (2) organisational learning, and alliances & networks contribute to the R^2 of ambidexterity. The contributions of these other DCs highlight their indirect effects on the relationships: strategic leadership \rightarrow ambidexterity, and strategic leadership \rightarrow innovativeness.

The f^2 values are shown in Table 5.15. The t -statistics for the f^2 values are indicated in Table 5.16.

Table 5.15: f^2 Statistics of the Structural Model

	Alliances & Networks	Ambidexterity	Innovativeness	Learning	Performance
Alliances & Networks		0.017*	0.004	0.033	
Ambidexterity			0.310***		0.023*
Innovativeness					0.101**
Learning		0.204***			0.011
Strategic Leadership	0.398***	0.173***	0.168***	0.705***	0.003

* $p > 0.10$; ** $p < 0.05$; *** $p < 0.01$

The f^2 values for the relationship between latent constructs in the structural model are shown in the table above. Their statistical significance obtained from table 7.21 below are also shown.

Table 5.16: T-Statistics of the f^2 values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Alliances & Networks -> Ambidexterity	0.042	0.046	0.026	1.653*	0.098
Alliances & Networks -> Innovativeness	0.008	0.013	0.014	0.538 ^{Nsig}	0.590
Alliances & Networks -> Learning	0.032	0.036	0.024	1.358 ^{Nsig}	0.175
Ambidexterity -> Innovativeness	0.195	0.202	0.069	2.812***	0.005
Ambidexterity -> Performance	0.039	0.042	0.024	1.646*	0.100
Innovativeness -> Performance	0.097	0.103	0.039	2.501**	0.012
Learning -> Ambidexterity	0.245	0.253	0.064	3.801***	0.000
Learning -> Performance	0.016	0.021	0.017	0.964 ^{Nsig}	0.335
Strategic Leadership -> Alliances & Networks	0.312	0.326	0.078	4.013***	0.000
Strategic Leadership -> Ambidexterity	0.186	0.193	0.059	3.162***	0.002
Strategic Leadership -> Innovativeness	0.151	0.155	0.045	3.337***	0.001
Strategic Leadership -> Learning	0.510	0.524	0.108	4.703***	0.000
Strategic Leadership -> Performance	0.004	0.007	0.009	0.397 ^{Nsig}	0.691

* $p > 0.10$; ** $p < 0.05$; *** $p < 0.01$; Nsig = Non-significant

The table above shows the t-statistics and the level of significance for the f^2 values of the relationships between latent constructs in the structural model.

5.6.8 EVALUATION OF THE PREDICTIVE RELEVANCE OF THE MODEL

Determining the model's capability to predict is another assessment of the structural model. Chin (1998: 320) posits that 'the prediction of observables or potential observables is of much greater relevance than the estimator of what are often artificial construct-parameter.'

The 'blindfolding' procedure of SmartPLS was used to calculate the predictive relevance, and the estimates assessed in line with Stone-Geisser's Q^2 (Geisser 1975; Stone 1974). Accordingly, the model is considered as having predictive relevance if $Q^2 > 0$. The Q^2 statistics are shown in Table 5.17 and Table 5.18 below.

Table 5.17: Construct Cross-Validated Redundancy

	SSO	SSE	Q ² (=1-SSE/SSO)
Alliances & Networks	1,260.000	1,116.912	0.114
Ambidexterity	2,205.000	1,447.854	0.343
Innovativeness	2,205.000	1,483.326	0.327
Learning	2,520.000	1,940.985	0.230
Performance	1,890.000	1,366.559	0.277
Strategic Leadership	2,205.000	2,205.000	

Table 5.18: Construct Cross-Validated Communalities

	SSO	SSE	Q ² (=1-SSE/SSO)
Alliances & Networks	1,260.000	908.933	0.279
Ambidexterity	2,205.000	1,257.321	0.430
Innovativeness	2,205.000	1,189.797	0.460
Learning	2,520.000	1,527.142	0.394
Performance	1,890.000	1,038.679	0.450
Strategic Leadership	2,205.000	1,424.074	0.354

As indicated in Table 5.17 above, the construct cross-validated redundancy for each construct shows $Q^2 > 0$. This confirms the predictive relevance (capability) of the structural model. Also, although not the better measure, the construct cross-validated communalities (in Table 5.18 above) equally shows $Q^2 > 0$ for each construct.

Therefore, it could be argued that by implementing the research model, SMPs would be able to reasonably predict outcomes of the relationships between the DCs, and also between DCs and performance.

5.7 TESTS OF DIRECT RELATIONSHIPS BETWEEN DCs AND PERFORMANCE

5.7.1 Significance of Path Relationships – Test of Hypotheses

The hypotheses expressed by the structural relationships between the latent constructs (DCs constructs and firm performance) in the conceptual research model (see Figures 5.2 and 5.3) were defined earlier, in the process of constructing the model (see Chapter 3). These

hypotheses were developed from extant literature and theory, thus underlining their theoretical relevance. The drawing of causal inferences from any statistical technique should be preceded and guided by sound hypotheses that are derived from sound theory (Lowry and Gaskin 2014). In this section, empirical data gathered in the study is employed in statistical analysis, to test the significance of each hypothesis and to conclude whether each is refuted or supported. The significance of each path coefficient is assessed by using a bootstrapping procedure. Evaluating the statistical significance of each path relationship (coefficient) is testing the statistical significance of the hypotheses that formed the basis of the structural model.

The statistical significance tests for the hypotheses are performed using the *t*-values. The critical *t*-values for two-tailed tests are 1.65 ($\alpha = 0.10$), 1.96 (at $\alpha = 0.05$), and 2.57 ($\alpha = 0.01$) (Hair et al. 2014).

Fig 5.3 presents the structural representation of the nomological model of hypothesised relationship

Figure 5.3: Statistical Significance of Path Coefficients Estimates for refined Research Model

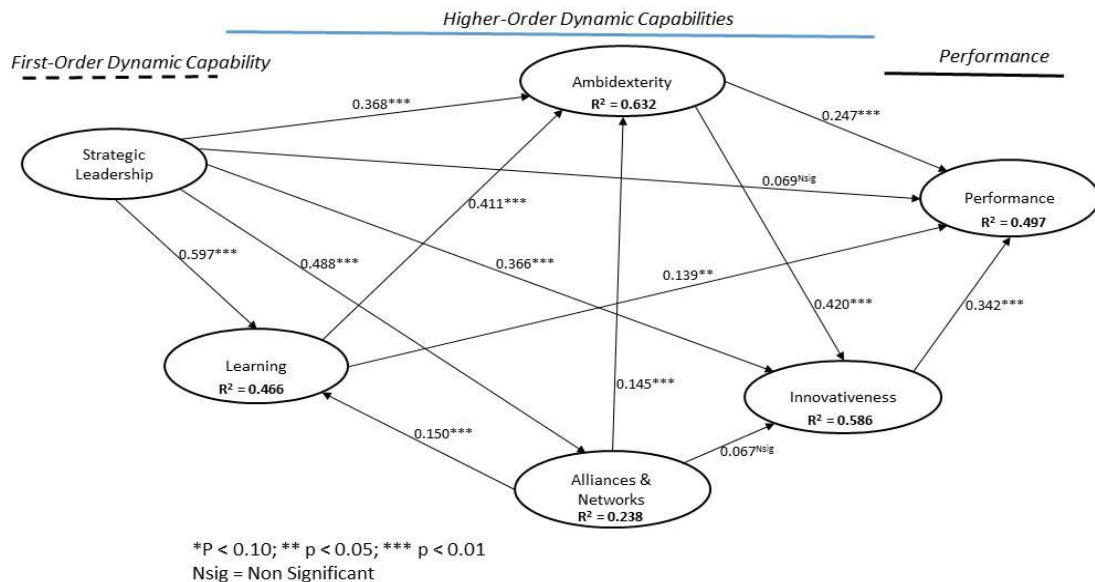


Figure 5.3: Statistical significance of path coefficients estimates for refined research model

Figure 5.3 above presents the statistical significance of path coefficient estimates for refined research model. For simplicity of presentation, the measurement of the individual indicators

that reflect the constructs have not been shown in Figure 5.3. However, the complete model with all individual items was used in the analysis.

The results of the tests of the relationships between DCs and firm performance are presented and discussed below:

H₁: Strategic leadership positively and significantly influences SMP performance.

The empirical t value = 1.001 is smaller than both the critical t value of 1.96 ($\alpha = 0.05$) and the critical t value of 1.65 ($\alpha = 0.10$). As the empirical t value is statistically non-significant at $\alpha = 0.05$ and at $\alpha = 0.10$, the null hypothesis is not rejected. Therefore, H_1 is not supported.

The empirical results do not support the hypothesis that strategic leadership has a significantly positive influence on SMP performance ($\beta = 0.069$; t -value = 1.001) – see Fig 5.3, Table 5.19 (& Table 5.20 (Appendix D)). Although the research evidence shows that there is a positive influence of strategic leadership on SMP performance, the effect of this direct relationship is not large enough to be statistically significant, that is, the relationship is positive but not significant. This result might not be quite surprising, considering the mediating effects of the higher-order DCs (ambidexterity, organisational learning, alliances & networks, and innovativeness) on the relationship between strategic leadership and SMP performance. It would be argued that the consequence of the indirect effects of these mediators is reduction of the impact of the direct positive effects of strategic leadership on SMP performance. This is supported by the fact that the parameter estimates for the direct strategic leadership \rightarrow performance relationship, without mediators, indicate a positive and highly significant effect of the former on the latter (path coefficient $\beta = 0.588$, $t = 15.998$, $p < 0.001$) – see Figure 7.1 and Figure 7.2 (in chapter 7).

The mediating effects⁹⁸ result from the higher-order DCs that are developed, maintained and deployed by the firm's strategic leadership – a first-order dynamic capability. This is consistent with the argument that the role of leadership in making quality decisions, communicating goals, values and expectations, while motivating staff and other stakeholders is critical as organizational identification and commitment can greatly improve a firm's

⁹⁸ Mediation is discussed in chapter 7.

performance (Duh 2013). In a similar vein, Teece (2012) posits that the responsibility and capability to evaluate and decide changes to the configuration and reconfiguration of the firm's resource base (within and outside its boundaries) remain with senior management, even though elements of DCs may be embedded in the organisational structure.

H₃: There is a positive and significant relationship between organisational learning and firm performance.

H₃ has an empirical *t* value = 2.121 which is larger than the critical *t* value of 1.96 ($\alpha = 0.05$). As the empirical *t* value is statistically significant at $\alpha = 0.05$, the null hypothesis is rejected. Therefore, *H₃* is statistically supported.

Empirical evidence from the study supports the hypothesis that SMP performance is significantly and positively influenced by the learning facilitated by the SMP, that is, organisational learning ($\beta = 0.139$; *t*-value = 2.121) - Table 5.19 (page 152) & Table 5.20 (Appendix D). Organisational learning enables the firm to identify the business needs of clients and to provide timely and appropriate solutions to such needs. Sample SMPs explain that organisational learning is an investment for the firm because it enables the firm's adaptability to environmental changes and improves the quality of service delivery to clients. Also importantly, organisational learning enables the SMP to improve the quality of existing service delivery while also exploring new knowledge for potential new service and/or product delivery. See sections 9.4.1.3; 9.4.1.7; 9.4.1.8; and 9.4.1.9 in Appendix F

Improvement in service delivery positively impacts on client satisfaction and retention, and would result in the SMP winning additional fee earning work from existing clients. Moreover, satisfied clients do recommend their accountants to other businesses, thus increasing the amount of new work (clients) gained by such SMPs through referrals. The improvement in client retention, increase in the amount of new work from existing clients, and increase in new clients gained through referrals positively impact on the performance of the SMP. These findings shed light on the view that a firm's knowledge in collecting, sharing, and disseminating market and entrepreneurial information, to effectively become market-driven and entrepreneurial-driven, is underpinned by organisational learning (Huang and Wang 2011), with such market-oriented approach positively influencing a firm's economic and non-

economic performance (Jimenez-Jimenez and Cegarra-Navarro 2007; Santos-Vijande et al. 2005).

H₉: Ambidexterity positively and significantly influences firm performance.

At a critical t -value = 2.57, the empirical t value = 3.466 is statistically significant at $\alpha = 0.01$. Therefore, the null hypothesis is rejected, and H_9 is statistically supported.

The above results provide evidence that ambidexterity has a significantly positive direct effect on SMP performance, thus supporting the hypothesis ($\beta = 0.247$; t -value = 3.466) – see Table 5.19 (page 152) & Table 5.20 (Appendix D). The exploitation of existing know-how enables the SMP to acquire a wealth of experience, make efficiency gains and improve the quality of services it provides. As the SMP becomes more efficient in delivering a quality of service that meets its clients' needs or exceed their expectation, its variable costs would be reduced. In addition, improvement in service quality results in client satisfaction. Satisfied clients are more likely to go to their accountants for more business advice, thus giving more fee earning work to such accountants. Furthermore, satisfied clients are likely to recommend their accountants to other businesses, thus increasing the amount of new clients gained by the SMP through referrals. Also importantly, client satisfaction improves client retention and, together with new service/product offerings resulting from exploration of new knowledge, give the SMP a competitive edge in the market with consequent improvement in firm performance. This agrees with and shed light on Lubatkin et al. (2006) who find that an ambidextrous orientation is central to enhancing returns for the firm relative to its competitors, considering that the firm is better positioned to attain and sustain its competitive advantage, and to protect future cash flows from external selection pressures.

Furthermore, with a wealth of experience in the services offered, and improvement in service quality, the SMP is likely to increase the fees it charges for its services/products – firstly to new clients when taken on by the firm, then to existing clients when fees are reviewed. Therefore, the combination of reduction in variable costs, higher fee charges, and increase in fee income from growth in the volume of work occasioned by the SMP's ambidexterity, has the consequence of a positive and significant impact on the firm's performance. This finding is consistent with, and enhances understanding of Van Looy, Martens, and Debackere (2005) who posit that the complexity of ambidextrous organizations involves costs that could lead to

inferior financial returns, although when properly designed and managed, these organisations achieve sustainability and superiority in value creation.

H₁₃: There is a positive and significant influence of firm innovativeness on its performance.

At a critical t value = 2.57, the empirical t value = 5.494 is statistically significant at $\alpha = 0.01$. Therefore, the null hypothesis is rejected, and H_{13} is statistically supported.

Thus the study results present empirical evidence that SMP innovativeness has a positive and significant impact on its performance ($\beta = 0.342$; t -value = 5.494) - Table 5.19 (page 152) & Table 5.20 (Appendix D). This is because SMP innovativeness leads to the delivery of new services to both existing and new clients. For example, some innovative SMPs have introduced value-added advisory services and consulting services to their portfolio of service offerings. Other SMPs have been innovative by grouping a number of services into packages, with fee charges dependent on the type of services included in any specific package. By so doing, in addition to selling the packages to clients as solutions to problems faced by businesses, a client would opt for a package that is relevant to addressing the issues that confronts his/her business. Such packages range from a basic package that includes only certain compliance services, to a more comprehensive package that includes a number of advisory services. This helps to increase the range of services offered by the SMP and, thus, its fee income.

SMPs have also been innovative in methods of delivering services to clients. For example, many have taken advantage of technology – cloud accounting – to drive service delivery. This has improved efficiency and enabled a reduction in variable costs in the long-term. Thus, the introduction of new services, venturing into new markets, packaging (and repackaging) of services, and use of new methods of delivering services are SMP innovativeness that have had the effect of increasing its revenue and reducing its variable costs, thereby increasing the contribution margin. The overall consequence of its innovativeness is the positively impacting on its performance. These findings agree with Lawson and Samson (2001) who contend that innovation, a key mechanism for organisational growth and renewal, does not necessarily require specific focus on technology, as it may relate to the development of new products, new processes, systems or even business models. The findings also agree with the arguments by other researchers that new or substantially modified service delivery processes or service

concept that deliver new or improved solutions to a problem in order to add value to clients, are service innovations (Tidd and Hull 2003), and that firms involved in the provision of services engage in service innovation so as to maintain or improve their competitive position (Yeh and Sur 2015). Furthermore, the findings support Kiernan (1996) who posits that by bringing new products to the market while improving existing ones, the firm is placed in a dynamic and sustainable strategic position which makes it a constantly moving target to competitors.

Table 5.19: Hypothesised Relationships with Path Coefficients, T-Statistics and 95% Confidence Intervals

Hypothesised Relationships	Hypotheses	Path Coefficient	T Statistics (O/STDEV)	95% Confidence Interval (CI)	95% CI - Bias Corrected	Results
Strategic Leadership → Performance	H_1	0.069 ^{Nsig}	1.001	-0.067, 0.202	-0.068, 0.200	Not Supported
Organisational learning → Performance	H_3	0.139**	2.121	0.014, 0.270	0.010, 0.263	Supported
Ambidexterity → Performance	H_9	0.247***	3.466	0.100, 0.379	0.101, 0.379	Supported
Innovativeness → Performance	H_{13}	0.342***	5.494	0.223, 0.468	0.219, 0.466	Supported

Nsig = Non significant; * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Also see Table 5.20: Mean, STDEV, T-Values, P-Values for Path Coefficients

[INSERT TABLE 5.20 ABOUT HERE]

5.8 THE EFFECTS OF CONTROL VARIABLES

As indicated in chapter 3, three control variables are employed in the study – firm size, firm age, and environmental turbulence. In the sections below, the effects of the control variables are evaluated. The analysis for each control variable was performed using multi-group analysis (MGA). The significance of differences in specific path relationships (coefficients) between firm size, firm age or environmental turbulence subgroups is determined using PLS-MGA with SmartPLS software V.3.2.4 software (Ringle, Wende, and Becker 2015), with the following settings: 5000 subsamples, parallel processing, no sign changes, complete bootstrapping, Bias-corrected and Accelerated (BCa) bootstrap, and two-tailed. Bootstrap parameter estimates with p-value < 0.05 or > 0.95 are statistically significant at alpha (α) = 0.05 (Ringle, Wende, and Becker 2015).

5.8.1 Validation of model for assessing the effects of control variables

The measurement and structural model qualities were evaluated to ensure good model fit prior to assessing the effects of each control variable. The assessment of the model quality of each control variable is indicated in the subsection in which the effects of the variable are analysed. The measurement model analysis has been performed in line with Hair et al. (2014), Henseler, Ringle, and Sinkovics (2009), Chin (1988), and Nunnally and Berstein (1994), and exhibit satisfactory loadings for all indicators.

For each control variable, evaluation of its effects will take a two-step approach: (i) evaluation of differences in path coefficients between subgroups; (ii) evaluation of significance of differences in path relationships between the subgroups.

5.8.2 The control effects of firm age

To evaluate the effects of firm age on the relationship between DCs and firm performance, sample firms were split into two groups - those that have been established for 10 years or less (Age-Group-1) and those that have been established for over 20 years (Age-Group-3).

5.8.2.1 Evaluation of model qualities

The evaluation of the quality criteria for the model used in determining the control effects of firm age is presented in Appendix H.

5.8.2.2 Evaluation of Differences in Path Coefficients between SMPs Age-Groups

A comparison of the Age-specific path coefficients shows a number of differences between the two groups of SMPs. For instance, the SMPs in Age-Group-3 (SMPs in existence for more than 20 years) exhibit greatest comparative effect over Age-Group-1 (SMPs in existence for 10 years or less) in the two path relationships: Innovativeness → Performance [diff = 0.228] and; strategic leadership → performance [diff = 0.178]. The other two path relationships, including for Age-Group-1 (organisation learning → performance; ambidexterity → performance) show differences between the two groups with no such difference greater than 0.079. The statistics are presented in Figure 5.4.

Figure 5.4: Results of model test for control effects of SMP Age-Groups

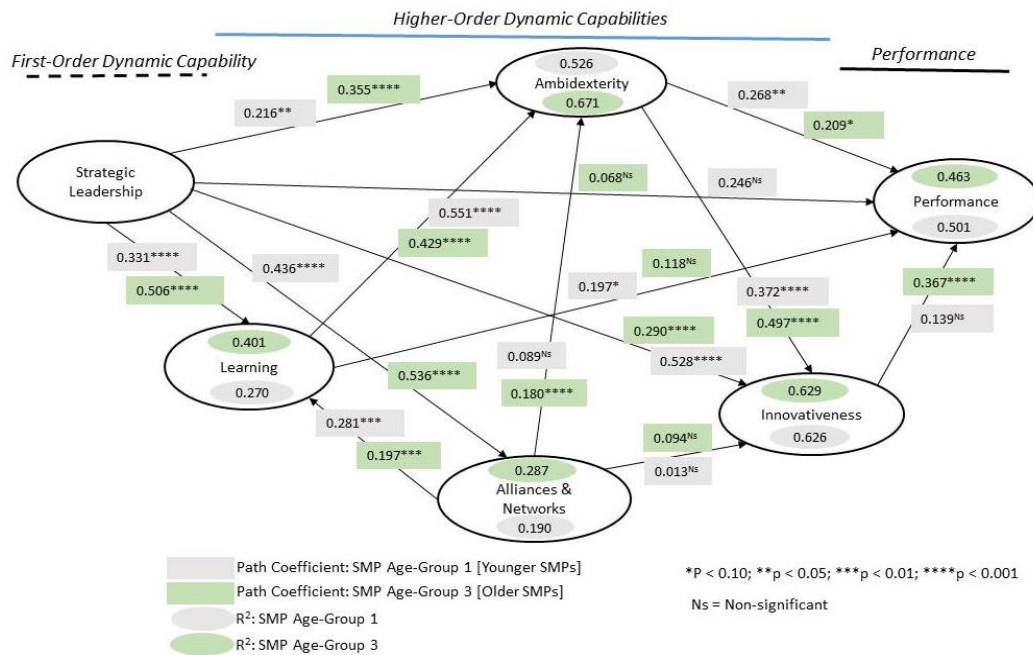


Figure 5.4: Results of model test for control effects of SMP Age-Groups

Table 5.21: Results of model test for the control effects of SMP Age-groups

Hypothesised Relationships	Path Coeff (AGE-1 [0 – 10])	Path Coeff (AGE-3 [>20])	t-Values (AGE-1 [0 - 10])	t-Values (AGE-3 [>20])	p-Values (AGE-1 [0 - 10])	p-Values (AGE-3 [>10])
Strategic Leadership → Performance	0.246	0.068	1.625	0.728	0.104	0.467
Org Learning → Performance	0.197*	0.118	1.775	1.275	0.076	0.202
Ambidexterity → Performance	0.268**	0.209*	1.962	1.890	0.050	0.059
Innovativeness → Performance	0.139	0.367****	1.027	3.745	0.305	0.000

*Significance at 0.10; **Significance at 0.05; ***Significance at 0.01

5.8.2.3 Significance of differences in path relationships between SMPs by Age-Groups

The results show that there is a significant difference in a number of path coefficients between latent constructs for SMPs in Age-Group-1 (≤ 10 years) as opposed to SMPs in Age-Group-3 (> 20 years). These path relationships are:

Table 5.22: Multi-group Comparison Results for SMP Age-Groups

Hypothesised Relationships	Comparison Age-Groups [of SMPs]	diff	p-Value (AGE-1 [<20Y] vs AGE-3 [>20Y])	Results
Strategic Leadership → Performance	AGE-1 vs AGE-3	0.178	0.158	Non-significant difference
Org Learning → Performance	AGE-1 vs AGE-3	0.079	0.291	Non-significant difference
Ambidexterity → Performance	AGE-1 vs AGE-3	0.059	0.358	Non-significant difference
Innovativeness → Performance	AGE-1 vs AGE-3	0.228	0.914*	Significant difference

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$; **** $p < 0.001$

The influence of innovativeness on performance is significantly different between younger SMPs (Age-group-1) and older SMPs (Age-group-3).

At $\alpha = 0.10$, the path relationship for innovativeness \rightarrow performance is significantly different between SMPs in age-group-1 and SMPs in age-group-3, with the effect of innovativeness on performance for SMPs in age-group-3 significantly stronger than for SMPs in age-group-1 [diff = 0.228; p-value = 0.914].

The statistical results illustrate that the effect of innovativeness on performance is significantly different between younger SMPs (10 years old or less) and old SMPs (over 20 years old), with the effect stronger in older SMPs than in younger SMPs. Looking at the research model,⁹⁹ the DCs constructs with direct impact on SMP innovativeness are strategic leadership, alliances & networks, and ambidexterity. Older SMPs are likely to be larger in size and have a more established track record (reputation) than younger SMPs. With a larger size, the older SMPs are more likely to have the resource base necessary not only to exploit their existing expertise but also for the exploration of new knowledge (i.e. adopt an ambidextrous orientation) which is the foundation for a firm's innovativeness. Hence because these firms have a better resource base to engage an ambidextrous orientation, there is a greater contribution from ambidexterity to innovativeness in older firms (ambidexterity \rightarrow innovativeness: $\beta = 0.497$) than in younger SMPs (ambidexterity \rightarrow innovativeness: $\beta = 0.372$). Laperche and Liu (2013) argue that ambidexterity is an essential capacity to build competitive advantages over competitors in the context of growing open innovation, where a firm builds up its knowledge-capital through dynamic knowledge management of its 'knowledge capacities' (p. 4).

Also, because the older firms have a more established track record, and their longevity may enable them understand the market better than the younger firms, they will find it easier to belong to (or be more accepted by) more established alliances & networks. This enables the older firms to use their alliances & networks to diversify their service offerings. This is supported by the stronger path coefficient from alliances & networks to innovativeness in older SMPs ($\beta = 0.094$) than in younger SMPs ($\beta = 0.013$). It is argued that global network is an important (critical factor) in the business outlook and subsequent performance of firms, since a well-established global network enables access to valuable information and external sources (Liu, Wright, and Filatotchev 2015). Furthermore, alliances are important instruments

⁹⁹ See Figure 3.1.

for augmenting a firm's asset base, as they grant access to resources that are external to the firm's boundaries (Das and Teng 2000). Therefore, the combination of larger contributions from ambidexterity, and alliances & network to innovativeness in older SMPs implies a larger volume of innovativeness in this group of SMPs than in younger SMPs.

The larger volume of innovativeness in older SMPs has enabled them introduce and market more new services and/or products,¹⁰⁰ which usually take them up against competitors.¹⁰¹ It also implies that these older firms can reach out to and attract a wider variety of clients than the younger SMPs, considering the broader range of service offerings resulting from innovativeness. The effect of increase in service offerings and subsequent increase in client portfolio is an improvement in revenue directly related to innovativeness in these older firms. This increased clientele is also supported by the marketing programmes developed by the older firms.¹⁰² Kiernan (1996) points out that by bringing new products to the market while improving existing ones, the firm is placed in a dynamic and sustainable strategic position. Consequently, the larger impact of innovativeness on performance in older SMPs is explained by the larger volume of service portfolio in older SMPs than in younger SMPs.

DCs → Performance path relationships with non-significant difference between the two SMP age-groups

Although there are differences in the path relationships (i.e., strategic leadership → performance; ambidexterity → performance; organisational learning → performance) between the two age-groups of SMPs, these differences are statistically non-significant. The results of the tests for the control effects of firm age are summarised in Table 5.22.

5.8.3 The control effects of firm size

Firm size, a contextual variable, was included in the model in order to control for the effects it may have on SMP performance. Firm size was determined by the number of employees in a firm. The aggregate model used for assessing the significance of the control effects of SMP size comprised of: Size-Group-1 (1-9 employees): n = 202; Size-Group-2 (10-49 employees): n = 88. SMPs with 50 to 249 employees were left out of this analysis because of their small

¹⁰⁰ Indicator (IN_04) loadings: [younger SMPs] = 0.688; [older SMPs] = 0.807.

¹⁰¹ Indicator (IN_09) loadings: [younger SMPs] = 0.629; [older SMPs] = 0.738.

¹⁰² Indicator (IN_07) loadings: [younger SMPs] = 0.766; [older SMPs] = 0.787.

sample size (n = 25). It was not considered appropriate to include these firms into Size-group-2 as doing so could have impacted on the interpretation of the results.

5.8.3.1 Evaluation of model qualities

The quality criteria of the model used to assess the control effects of firm size were evaluated. See Appendix I.

5.8.3.2 Assessment of the size of specific path relationships between SMP size groups

The parameter estimates illustrate that two path relationships in SMPs size-group-2 are non-significant (i.e. Strategic leadership → performance ($\beta = 0.045$, $t = 0.361$); ambidexterity → performance ($\beta = 0.067$, $t = 0.494$)). The other two path relationships (OL → performance; Innovativeness → performance) in size-group-2 are significant. On the other hand, two path relationships in size-group-1 are non-significant (i.e. OL → performance ($\beta = 0.100$, $t = 1.233$); strategic leadership → performance ($\beta = 0.006$, $t = 0.063$)). The two other path relationships (ambidexterity → performance; Innovativeness → performance) in size-group-1 are significant. See Figure 5.5 below.

Figure 5.5: Results of statistical significance of Path Coefficients for SMPs by Size-Groups

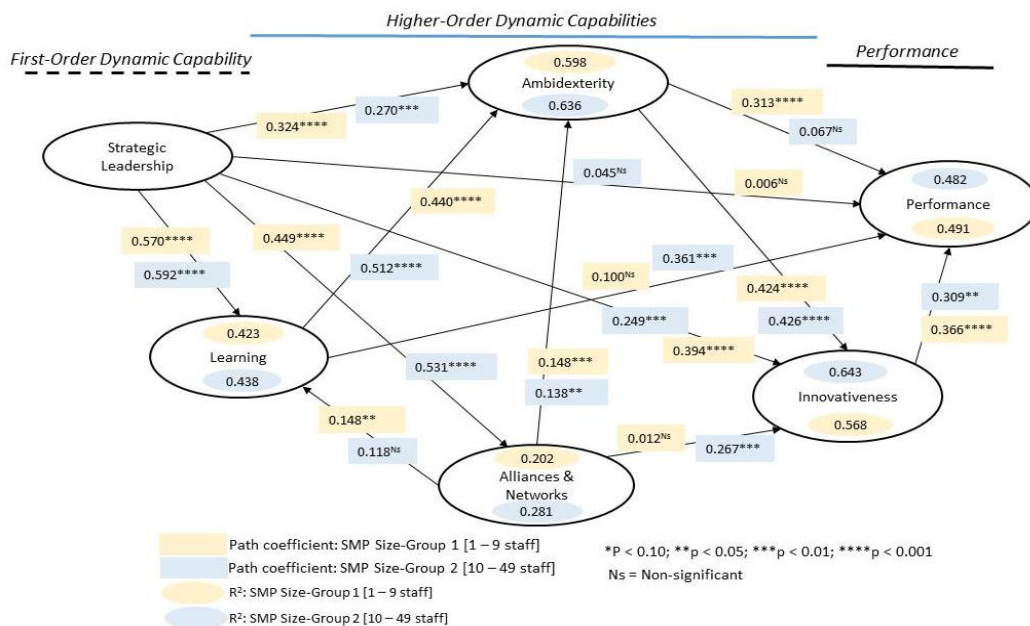


Figure 5.5: Results of statistical significance of path coefficients for SMPs by Size-groups

Figure 5.5 above depicts the research model for size as a control variable, with SMPs size-group specific path coefficients and their significance. It also shows the size-group specific R² for the endogenous constructs and dependent variable in the model.

The t-statistics for the path coefficients shown in Figure 5.5 above are provided in Table 5.23.

Table 5.23: Results of model test for the control effects of SMP Size-groups

Hypothesised Relationship	Path Coeff [SIZE - Group 1]	Path Coeff [SIZE - Group 2]	t-Values [Size-Group-1]	t-Values [Size-Group-2]	p-Values [Size-Group-1]	p-Values [Size-Group-2]
Strategic Leadership → Performance	0.006	0.045	0.063	0.361	0.950	0.718
Org Learning → Performance	0.100	0.361***	1.233	2.733	0.218	0.006
Ambidexterity → Performance	0.313****	0.067	3.561	0.494	0.000	0.621
Innovativeness → Performance	0.366****	0.309**	4.669	2.364	0.000	0.018

** p < 0.05; *** p < 0.01; **** p < 0.001

A comparison of the Size-specific path coefficients shows absolute difference between each path coefficient for the two groups of SMPs. For instance, the SMPs in Size-Group-1 [SMPs with 1-9 staff] exhibit greatest comparative effect over Size-Group-2 [SMPs with 10-49 staff] in the following two path relationships: ambidexterity → performance [diff = 0.246]. On the other hand, Size-Group-2 exhibits greatest comparative effect over Size-Group-2 in the path relationship: learning → performance [diff = 0.261]. The other two path relationships (Strategic leadership → performance; Innovativeness → performance) exhibit differences from 0.039 to 0.057, respectively, between the two groups. The statistics are presented in Figure 5.5.

Although the parameter estimates show an absolute difference between the size-groups specific path coefficients, the statistical significance of these differences is determined by analysing the estimated t-values for the absolute difference specific path coefficients between size groups. These t-statistics are analysed below.

5.8.3.3 Statistical Significance of differences in Path Coefficients between SMPs by Size-Groups

The results show that there is a significant difference in two path relationships between latent constructs for SMPs in Size-Group 1 (SMPs with less than 10 staff) as opposed to SMPs in Size-Group 2 (SMPs with 10 to 49 staff). These path relationships are:

The influence of organisational learning on firm performance is significantly different between SMPs in Size-Group-1 (Micro SMPs) and Size-Group-2 (Small SMPs).

At $\alpha = 0.05$ [p-value = 0.954], there is a significantly stronger effect of organisational learning on firm performance for SMPs in Size-Group-2 as against SMPs in Size-Group-1.

The results suggest that the effect of the DC of organisational learning on SMP performance is significantly and positively stronger for small SMPs ($\beta = 0.361$) than for micro SMPs ($\beta = 0.100$); [diff = 0.261, p-value = 0.954] - see Table 5.24. Because development and deployment of DCs involve cost that may require dedicated resources, micro firms (1-9 employees) are less likely to meet the scale needed to justify DCs. These results are consistent with the findings that smaller SMEs, unlike larger SMEs, will benefit less from the advantages of DCs due to scale and scope economies for any learned capability (Zollo and Winter 2002), as there is a larger base to which the fixed cost of learning a specific and relevant dynamic capability is spread (Arend 2014).

The influence of ambidexterity on performance is significantly different between SMPs in Size-Group-1 (Micro SMPs) and Size-Group-2 (Small SMPs).

At $\alpha = 0.10$ [p-value = 0.061], the effect of the latent variable ambidexterity on the latent variable performance for SMPs in Size-Group-1 is significantly stronger than is the case for SMPs in Size-Group-2.

Empirical evidence shows the effect of ambidexterity on enterprise performance for micro SMPs is significantly stronger than is the case for small SMPs (see Table 5.24). The results imply that the ambidexterity DC has a significantly stronger and positive effect on SMP performance for micro SMPs [1-9 employees] ($\beta = 0.313$) than for small SMPs [10-49

employees] ($\beta = 0.067$). Ambidexterity involves the exploitation of existing know-how as well as exploration of new knowledge, suggesting that small SMPs than micro SMPs are more likely to have the resources and structures necessary to adopt an ambidextrous form. However, the stronger influence of ambidexterity on performance for micro SMPs could be explained by the fact that micro SMPs cannot simultaneously exploit their existing skillset while exploring new knowledge. Therefore, they tend to focus on the exploitation of existing know-how, that is, these firms focus on their core strength in order to become more efficient in delivering their core services. With improved efficiency, micro SMPs are able to reduce cost and improve on client satisfaction and retention.

Exploration of new knowledge (the other part of ambidexterity) leads to development of new services and/or products (i.e. innovativeness). This implies that small SMPs benefit more from the effects of exploring new knowledge than micro SMPs. This is because there is less restriction on application of DCs in the small SMPs with a relatively large resource base than the micro SMPs. This is consistent with the argument that unlike in smaller firms where employees are generalists in service/product provision, larger firms provide greater specialisation economies and reduction in the learning curve since employees are able to specialise in specific DCs (Macher and Mowery 2009). Similarly, applying DCs to a larger and broader range of operational capabilities will give a greater opportunity for innovation; the larger the resource base, the less the restriction there is on the application of DCs; deploying DCs to a broader base of absorbed knowledge gives a greater opportunity for innovation (Arend 2014). The results of the assessment of the control effects of firm size are summarised in Table 5.24.

Table 5.24: Multi-Group Comparison results for SMP Size-groups

Hypothesised Relationships	Comparison SIZE [No of Employees]	diff	p-Value (SIZE-1 [1-9] vs SIZE-2 [10-49])	Results
Strategic Leadership → Performance	[1-9] Vs [10-49]	0.039	0.602	Non-significant difference
Org Learning → Performance	[1-9] Vs [10-49]	0.261	0.954**	Significant difference
Ambidexterity → Performance	[1-9] Vs [10-49]	0.246	0.061*	Significant difference
Innovativeness → Performance	[1-9] Vs [10-49]	0.057	0.353	Non-significant difference

* Significant at 0.10; ** Significant at 0.05

Table 5.24 above presents statistics that illustrate the control effects of firm (SMP) size.

5.8.4 The control effects of environmental turbulence

In the context of this research, environmental turbulence was split into three separate categories: 1) Changes in the environment (laws and regulations), and difficulty in predicting such changes; 2) Intensity of competition (market turbulence) within the industry and; 3) Changes in types of products/services provided by SMPs.¹⁰³ As respondents answered the questions on a 7-point Likert scale, ratings on the scale have been grouped in order to facilitate the analysis and to render it more comprehensible. In investigating the effects of an ambidextrous supply chain strategy on combinative competitive capabilities and business performance, Kristal, Huang, and Roth (2010) used environmental dynamism as a control variable.

Since only 29 respondents (n = 29) indicated no change in the demand for products and services provided by SMPs, against 284 respondents (n = 284) who recognise change in this aspect, the impact of such changes on SMPs DCs could not be analysed and tested because the n = 29 is less than the minimum sample size required for a PLS-SEM approach to be adopted, which in the context of this study is 40 (10 times the maximum number of arrows point at a latent construct (Peng and Lai 2012) which is 4). This is same for changes in Law and Regulation.

Therefore, only the control effect of competitive intensity is analysed:

5.8.4.1 The control effects of competitive intensity (market turbulence)

In order to analyse the control effect of competitive intensity (I_COM) on the DCs → performance relationships, sample SMPs were divided into two groups – those that perceive competition in the industry to be intense (I_COM-y), and those that do not (I_COM-n).

The aggregate model used for assessing the significance of the moderating role of competitive intensity comprised of: I_COM-y (n = 237); I_COM-n (n = 78).¹⁰⁴ As in testing the effects of

¹⁰³ This is as a result of changes in demand for services/products by SMEs.

¹⁰⁴ A 7 point Likert scale (with 1 = totally disagree; 4 = neither agree nor disagree; 7 = totally agree) was used for the question relating to competitive intensity (market turbulence). Responses on points 1 to 4 on the Likert scale were grouped together to represent respondents who perceive that the market is not competitively intensive (i.e. the market is not turbulent). Also, responses on point 5 to 7 of the

the other control variables (SMP-Age and SMP-Size), the control effects of competitive intensity have been tested by way of Multi-Group Analysis (MGA) using SmartPLS software (Ringle, Wende, and Becker 2015) version 3.2.6.

Evaluation of Model Quality

The model quality criteria were evaluated and considered satisfactory as the thresholds were met. These are presented in Appendix J.

5.8.4.2 Statistical Significance of specific Path Coefficients for SMPs in I_COM-y & I_COM-n Subgroups

A comparison of the path relationships between firms in *I_COM-y* and firms in *I_COM-n* shows a number of differences between the two groups of SMPs. For instance, the SMPs in *I_COM-n* exhibit greatest comparative effect over SMPs in *I_COM-y* in the path relationships: ambidexterity → performance [diff = 0.346]; strategic leadership → performance [diff = 0.107]. On the other hand, SMPs in *I_COM-y* demonstrate greatest comparative effect over *I_COM-n* in the following path relationships: innovativeness → performance [diff = 0.117]; learning → performance [diff = 0.279]. These statistics are presented in Figure 5.6 and Table 5.25.

Likert scale were grouped together as respondents who perceive the market to be competitively intensive (i.e. the market is turbulent). There were 29 respondents who selected point 4 on the Likert scale.

Figure 5.6: Results of statistical significance of Path Coefficients for SMPs by Perceived Competitive Intensity

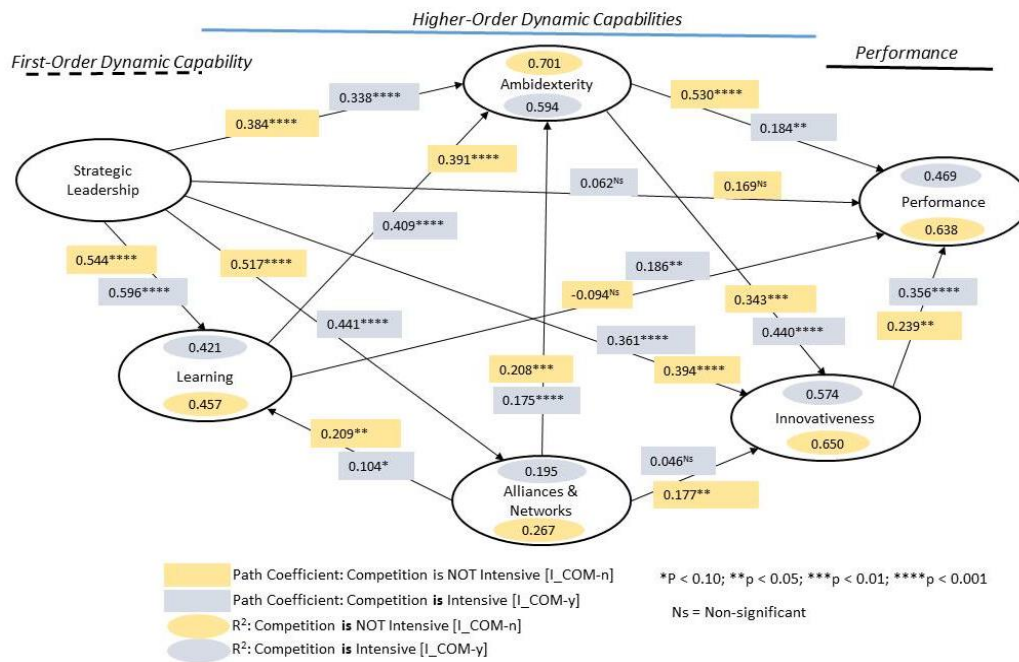


Figure 5.6: Results of statistical significance of Path Coefficients for SMPs by perceived Competitive Intensity.

Figure 5.6 above presents the research model for Competitive Intensity (Market Turbulence) as a control variable, with path coefficients and their significance for SMPs by perceived competitive intensity subgroups. The R² for the endogenous constructs and dependent variable are also presented.

The t-statistics for the path coefficients shown in Figure 8.6 above are presented in Table 5.25 below.

Table 5.25: Results of model test for the control effects of I_COM sub-groups

Hypothesised Relationships	Path Coeff	Path Coeff	t-Values	t-Values	p-Values	p-Values
	[I_COM-n]	[I_COM-y]	[I_COM-n]	[I_COM-y]	[I_COM-n]	[I_COM-y]
Strategic Leadership → Performance	0.169	0.062	1.331	0.744	0.183	0.457
Org Learning → Performance	-0.094	0.186**	0.733	2.532	0.464	0.011
Ambidexterity → Performance	0.530****	0.184**	3.934	2.144	0.000	0.032
Innovativeness → Performance	0.239**	0.356****	2.084	4.751	0.037	0.000

* p < 0.10; ** p < 0.05; *** p < 0.01; **** p < 0.001

Table 5.25 above presents the specific path coefficients and related t-statistics for SMPs per perceived competitive intensity (I_COM) subgroups.

5.8.4.3 Significance of differences in Path Coefficients between I_COM-y & I_COM-n

The results show that there is a statistically significant difference in two path relationships between DCs constructs and firm performance for SMPs who perceive the industry to be intensely competitive (I_COM-y) as opposed to those that do not (I_COM-n). These path relationships are:

The influence of ambidexterity on performance is significantly different between SMPs that perceive the industry is intensely competitive (I_COM-y) from those that perceive that the industry is not intensely competitive (I_COM-n).

At $\alpha = 0.05$ [p-value = 0.021], the effect of the latent variable ambidexterity on the dependent variable performance for SMPs in I_COM-n is significantly stronger than is the case for SMPs in I_COM-y.

The results suggest that firms that perceive the market to be less turbulent (i.e. less competitive) experience a significantly positive effect of ambidexterity DC on performance ($\beta = 0.530$), than those which perceive the market to be competitively intensive (i.e. more turbulent) ($\beta = 0.184$) - see Fig 5.6, and Tables 5.25 & 5.26. Ambidexterity involves exploitation of current know-how, and exploration of new knowledge. When the market (environment) is perceived to be very turbulent, SMPs continuously reconfigure their operational capabilities in order to adapt to the environmental changes. Such reconfiguration which includes continuous change in the method of delivering services, and continuous attempt to deliver new services/products, detract the SMP from delivering and improving quality of its existing core services. Such continuous reconfiguration will also lead to less consolidation of knowledge and expertise (competencies) in existing services, introduction of new services/products that are not well thought out and mastered, and increased cost to the SMP, all of which could negatively impact on the quality of services to clients. The fall in the quality of services will lead to reduction in client satisfaction and a consequent fall in client number due to dissatisfied clients moving on to different SMPs. The increased cost resulting

from the continuous reconfiguration of capabilities and client dissatisfaction resulting from decline in quality of service will negatively impact the SMP's performance.

On the other hand, the perception of a market that is not very turbulent (i.e. moderately turbulent) will require the SMP to reconfigure its operational capabilities (i.e. deploy the appropriate DCs) in order to adapt to the moderate change with respect to competition. Such adaptation enables the SMP to improve the quality of services/products it offers, leading to an increase in client satisfaction. An increase in client satisfaction makes it possible for the SMP to cross-sell additional services/products to existing clients, and for clients to recommend their accountants to other businesses, both of which will lead to an increase in revenue for the SMP, hence an improved performance.

Thus when SMPs perceive high turbulence in the market, their continuous reconfiguration of capabilities eventually leads to a decline in their performance. Otherwise, when SMPs perceive moderate market competition, the reconfiguration of capabilities results to improved performance. This is because although there is cost to the firm resulting from the development of DCs and reconfiguration of capabilities in an environment of moderate change, such cost is less than the increased revenue from both cross-selling of services/products to existing clients, and the services to new clients gained through referrals. The results here are consistent with the argument that because the deployment of DCs is influenced by managerial perceptions (Ambrosini and Bowman 2009), their deployment could be different in similar firms due to differences in perception of environmental uncertainties by managers (Aragon-Correa and Sharma, 2003). This is particularly important for small firms considering the inherent restrictions on such firms, resulting from their limited resources.

The influence of organisational learning on performance is significantly different between SMPs that perceive the industry is intensely competitive (I_COM-y) from those that perceive that the industry is not intensely competitive (I_COM-n).

At $\alpha = 0.05$ [p-value = 0.968], there is a significantly stronger effect of organisational learning on firm performance for SMPs in I_COM-y as against SMPs in I_COM-n.

The effect of organisational learning on SMP performance is significantly stronger for SMPs that perceive the market to be turbulent ($\beta = 0.186$), than for those that do not ($\beta = -0.094$) - see Fig 5.6, and tables 5.25 & 5.26. When firms (SMPs) perceive the market to be turbulent ($\beta = 0.186$), the organisational learning DC is further developed as the firm tends to learn,

acquiring knowledge about market forces (e.g. customer demands, competitor behaviour) in its environment, and on using such knowledge to shape its activities and manoeuvre itself through the uncertainty that results from market turbulence. This dynamic capability enables the firm to scan both the internal and external environments, to identify areas in which competition is intense, and ways in which the firm's routines could be adjusted and reconfigured in order to proactively adapt to such market turbulence. Such adaptation would also include improving efficiency, client satisfaction and client retention. Thus, efficiency gains help the SMP to reduce its variable cost, while client satisfaction and retention may lead to cross-selling by the SMP and referral of potential clients to the SMP, thereby giving it competitive advantage and improved financial performance.

The differences in other path coefficients (Strategic leadership → Performance; Innovativeness → Performance) between the two I_COM Groups are statistically non-significant. Table 5.26 summarises the statistical results of the effect of competitive intensity on the relationship between DCs and firm performance.

Table 5.26: Multi-Group Comparison results for SMP in I_COM sub-groups

Hypothesised Relationships	Comparison	diff	p-Value	Results
	I_COM-n [NO] Vs I_COM-y [YES]		I_COM-y [YES] Vs I_COM-n [NO]	
Strategic Leadership → Performance	[NO] Vs [YES]	0.107	0.240	Non-significant difference
Org Learning → Performance	[NO] Vs [YES]	0.279	0.968**	Significant difference
Ambidexterity → Performance	[NO] Vs [YES]	0.347	0.021**	Significant difference
Innovativeness → Performance	[NO] Vs [YES]	0.117	0.802	Non-significant difference

* $p < 0.10$; ** $p < 0.05$

Table 5.26 above shows the empirical results of the test of the control effects on competitive intensity on the direct relationships between DCs constructs.

5.9 CHAPTER SUMMARY

In this chapter, the descriptive statistics were presented and the data validated by evaluating missing data, normality of data distribution, non-response bias, and common method bias.

Also, the choice and justification of SEM methodology (that is, PLS-SEM) employed in data analysis were presented.

The fit of the data to the research model was validated by assessing the quality criteria of the model. The effect size, f^2 , of the structural model was evaluated as well as its predictive relevance. The results show a $Q^2 > 0$, confirming the predictive relevance of the model. Furthermore, the hypotheses relating to the direct relationships between DCs constructs and performance were tested. The results do not support one of the hypotheses: strategic leadership → performance. All the other hypotheses are supported.

Also, the control effects of SMP age, SMP size, and market turbulence, on the direct relationship between DCs constructs and firm performance were analysed using SmartPLS's Multi-group Analysis (MGA) function. The results show a number of path relationships with significant differences between SMP size groups, and between SMP age groups. Significant differences were also identified in a number of path relationships between SMPs in terms of their perception of the intensity of competition.

CHAPTER 6: THE DIRECT RELATIONSHIP BETWEEN DYNAMIC CAPABILITIES CONSTRUCTS

6.1 INTRODUCTION

In chapter 3, the hypothetical direct relationships between the first-order DC and higher-order DCs, and between higher-order DCs were developed and presented in hypotheses and conceptual research model. The validation of the qualities and fit of the model used for testing the hypotheses were established in the previous chapter (chapter 5). In this chapter, the empirical results of hypotheses tests relating to the direct relationships between DCs constructs as well as the effects of the control variables on these relationships are presented and discussed. The chapter is structured as follows: the influence of first-order DC on higher-order DCs; the relationships between higher-order DCs; the effects of control variables and; summary.

6.2 THE RELATIONSHIP BETWEEN FIRST-ORDER AND HIGHER-ORDER DCs

The hypotheses relating to the relationships between strategic leadership (first-order DC) and the higher-order DCs have been tested. The analysis and discussion of the empirical results are presented below:

H₂: Strategic leadership positively and significantly influences the firm's higher-order dynamic capabilities.

This hypothesis is split and separately tested for each dynamic capability included in the structural model, the results of which are analysed and discussed below:

H_{2a}: Strategic leadership positively and significantly influences organisational learning.

The hypothesis has an empirical $\beta = 0.597$; t -statistic = 13.788 – see Figures 5.2 & 5.3, and Table 6.1 (page 182), and Table 5.20 (Appendix D)). This empirical t value is larger than the critical t value of 2.57. As this implies statistical significance at $\alpha = 0.01$, the null hypothesis is rejected. Therefore path relationship strategic leadership → learning is statistically highly significant and the hypothesis, H_{2a} , is supported.

The hypothesis that strategic leadership positively influences organisational learning in the SMP is supported by empirical results indicating that strategic leadership has a positive and

significant effect on organisational learning. The strategic intent and strategic direction of the SMP is defined by its strategic leadership (orientation).¹⁰⁵ The SMP's strategic direction is a signpost to where the partners as directors of the firm want it to go in terms of types of services/products offerings, types of clients served, location of the firm, size of the firm, quality of employees, and expected performance (financial and non-financial). The milestones set out in the strategic direction of the SMP are subject to revision by the owners of the business due to either a change in the strategic intent or a change in the business environment. However, to enable top management set the appropriate goals for the business, and to help the firm achieve those objectives, SMPs need to have and be able to learn and manage the relevant knowledge – knowledge relating to the external environment,¹⁰⁶ internal environment,¹⁰⁷ where the firm is (in terms of objectives), performances, and where it would want to be, and a gap analysis of the resources that are needed to propel it to the level at which it wants to be. Such knowledge is underpinned by the learning the SMP engages in. These findings agree with the view of ACCA (2012) that in a complex and dynamic environment, a critical success factor is for the firm to build a knowledge seeking culture.

Organisational learning or individual learning in the SMP is determined by the directors of the firm, based on its strategic direction as defined by its strategic leadership/orientation. This is particularly important not only because learning is a cost to the firm, but also because it is considered an investment that lays the foundation for sustained competitive advantage and improved performance for the firm. Furthermore, because the strategic leadership of the SMP determines its objectives and direction, the type of learning they invest in is also determined by the firm's strategic orientation. This is because management could decide to focus on either individual learning or organisational learning. The distinction between individual and organisation learning in the context of the SMP is important because while organisational learning ensures learning and relevant training for every employee in the firm, individual learning will only lead to organisational learning if designed as such by the directors of the firm. SMPs underscore that they invest in organisational learning because it informs the other DCs (ambidexterity), and influences performance. Generally, these are consistent with findings in prior studies that leadership - the capability of decision making, risk taking, and creation of a learning culture within the firm - is an enabler of DCs (Rosenbloom 2000), and performs an important part in an organisation's evolution and that of its DCs (Salvato 2003).

¹⁰⁵ Strategic leadership and strategic orientation have the same meaning in the context of this study.

¹⁰⁶ Competition, legislation, technology, trends in clients businesses and industries, and changes in the macro economy.

¹⁰⁷ These are the skills, capabilities and experiences of staff and other internal resources/constraints.

Equally important is the fact that strategic leadership's influence on learning within the SMP is also manifested by senior management's decision on the type of learning that is necessary to help the firm achieve its objectives. This implies that in terms of learning, the director(s) decide whether the SMP (and its employees) should pursue learning only to acquire technical knowledge relevant to the accountancy profession or whether it engages in learning that also includes business management as well as other general knowledge that could be used to complement the technical skills of the accountants. Furthermore, in addition to deciding on the frequency of learning and how such learning will be delivered to staff of the SMP, the directors decide whether learning should be limited to knowledge about the firm's current range of service/product offerings.

Similarly, it is the responsibility of the directors to determine the amount of knowledge to be acquired through learning, its codification, storage, management and articulation within the SMP. This is crucial because management's investment in organisational learning is ultimately to steer the SMP on the path to competitive advantage and improved performance, which are achieved only by utilising the knowledge acquired from learning.

In order to facilitate organisational learning, and ensure that the investment yields the expected return, the directors of the SMP will determine that the quality of employees recruited are in line with the goals of adapting to change in the competitive environment and of building competitive advantage (short-term and long-term goals). This is because the amount and quality of new knowledge gained by scanning the environment and the use of such knowledge can be optimised by an increased absorptive capacity and knowledge articulation of those involved in the learning process and in knowledge management within the SMP, that is, its employees. Overall, these results reflect and enhances understanding of prior studies which argue that because entrepreneurial orientation underscores the need to proactively scan the environment for information such as competitors' strategy, to enable the firm to promptly respond to customer demands (Huang and Wang 2011), it is important for senior management to develop the facilitators of DCs within the firm (Duh 2013) which are fundamental to achieving long-term organisational objectives.

H_{2b}: Strategic leadership has a positive and significant influence SMP alliances and networks.

At a critical t value = 2.57, the empirical t value = 10.929 is statistically significant at $\alpha = 0.01$. The null hypothesis is, therefore, rejected. H_{2b} is thus supported.

The empirical results support the hypothesis that strategic leadership has a positive and significant influence on SMP alliances & networks ($\beta = 0.488$; t -statistics = 10.929) - see Table 6.1 (page 182), and Table 5.20 (Appendix D)). As can be observed in the structural model (see Fig 5.3, page 146), strategic leadership (a first-order dynamic capability) is the only predictor variable for SMP alliances & networks. This underscores the importance of strategic leadership in the establishment of, or the decision to enter into, alliances & networks. This is because such alliances & networks, whether formal or informal, require the specific action of top management in negotiating the terms of the relationship with other firms. The negotiations entered into, the type of alliances & networks, and the industries in which alliance partners operate are determined in line with the strategic direction adopted by the firm. This research identified SMPs that network with other accountancy firms as well as with firms operating in the legal profession and financial services (solicitors, banks,¹⁰⁸ IFAs¹⁰⁹) for the provision of complementary services. Such broad-based alliances are especially critical to the micro SMPs (1–9 employees) and small SMPs (10–49 employees)¹¹⁰ that are ambitious to increase their presence by growing their client base and improve their financial and non-financial performance. These findings complement Doving and Gooderham (2008) who argue that the quality and range of a small accountancy practice's external network is critical in obtaining the resources it lacks, considering the limitation to the number of competencies that can be developed internally as a result of its size. The results are also consistent with McEvily and Zaheer (1999) who find that the establishment and maintenance of a heterogeneous inter-organisational network that grants access to diverse capabilities, resources, and information could serve as a proxy for a dynamic capability.

Two categories of SMPs were identified from the qualitative data gathered for this research – growth oriented and non-growth oriented SMPs (see sections 9.4.1.3 & 9.4.1.8_in Appendix

¹⁰⁸ This involves networking with the bank manager who would refer their clients to the accountant (SMP) should they need one.

¹⁰⁹ Independent Financial Advisers

¹¹⁰ As indicated earlier in the literature review (see Chapter 2), this study defines an SMP in line with European Commission (2003) definition of SME as follows: i) Micro firms are firms that have less than 10 employees and either a turnover or balance sheet total \leq €2M; ii) Small firms are firms with less than 50 employees and either a turnover or balance sheet total \leq €10M; iii) Medium-sized firms are firms with less than 250 employees and either turnover \leq €50M or balance sheet total \leq €43M.

F). Growth oriented SMPs are those that seek growth (aspire to grow) in client number, fee income, and profitability; for example, by: introduction of new services (diversification of services), joining corporate alliances & networks, and improving the quality of services they offer. On the other hand, non-growth oriented firms are SMPs that have attained a level of growth that is satisfactory to the partners & directors (as owners of the business), and do not seek to win new work from new clients, nor venture into the provision of new and/or diverse services/products. Such firms will not seek to establish alliances & networks or may not engage in them with a view to benefiting from the advantages that such networks & alliances may offer. Also, the non-growth oriented firms will seek to focus on the current (existing) level of services they deliver, and to improve on quality (that is, exploitation of expertise), but will not want to explore new knowledge that may result in eventual delivery of additional services (that is, these firms are not willing to invest resources in the exploration of new knowledge), implying that such firms do not have an ambidextrous orientation - (see sections 9.4.1.3 & 9.4.1.8 in Appendix F). Consistent with this finding is Arend (2014) who points out that the appropriateness of having a dynamic capability is questionable for firms uninterested in improving their performance through growth as an option. This is because developing a routinized approach for changing their operational capabilities that are less likely to require change will incur the extra cost of having a dynamic capability, thus reducing performance.

H_{2c}: Strategic leadership positively and significantly influences SMP ambidexterity.

At a critical t value = 2.57, the empirical t value = 7.664 is statistically significant at $\alpha = 0.01$. The null hypothesis is, therefore, rejected. H_{2c} is thus supported.

The research results provide evidence that the strategic or entrepreneurial posture adopted by SMP does positively and significantly influence both its exploitation of existing knowledge and expertise, as well as its exploration of new knowledge and skills, that is, its ambidextrous orientation ($\beta = 0.368$; t -value = 7.664) - see Table 6.1 (Also see Table 5.20 (Appendix D)). SMPs argue that strategy (i.e. exploration) requires long-term decision and relates to the need to broaden the range of services provided and to improve the quality of service, while control (i.e. exploitation), a short to medium-term decision, is the need to consolidate the current level of services, in order to maintain their existing clients. Such long-term decisions are strategic, require strategic leadership, and are the responsibility of top management of the SMP. These findings agree with O'Reilly and Tushman (2008) who posit that to successfully engage in exploration and exploitation, on which the survival of a firm depends, the firm requires a

senior management team with cognitive and behavioural flexibility, to be able to establish and nurture a coherent alignment between its competencies, structures and cultures.

Furthermore, the positive and significant impact of the firm's strategic orientation on its ambidexterity are the results of direct and indirect senior management decisions that involve investment in, maintenance, and deployment of, DCs such as alliances & networks, and organisational learning that influence the SMP's ambidextrous orientation with a view to exploring new knowledge for eventual introduction of new service/product offerings. This finding supports Doving and Gooderham (2008) who contend that to extend and broaden the scope of advisory services provided by a small accounting practice is a long-term endeavour that requires purposeful and long-term investment in routines, systems, and processes, and may involve strategically anchored internal development routines and systems, or the development of external alliances with complementary service providers.

H_{2d}: Strategic leadership has a significantly positive influence on firm Innovativeness.

The hypothesis has an empirical t value = 7.068. This empirical t value is larger than the critical t value of 2.57. This implies statistical significance at $\alpha = 0.01$. Thus, the null hypothesis is rejected and H_{2d} is supported.

The empirical results support the argument set out in this research that SMP innovativeness is significantly and positively impacted by its strategic leadership ($\beta = 0.366$; t -value = 7.001) – see Fig 5.3, Table 6.1 (page 182) & Table 5.20 (Appendix D). This positive effect of strategic leadership on innovativeness is the result of: (i) direct management action to influence innovativeness, in line with the strategic direction of the firm (as identified in its (SMP's) strategic business plans); and (ii) indirect effects of management action through its investment in, and deployment of, other higher-order DCs demonstrated in the research model; that is, organisational learning, alliances & networks, and ambidexterity. The findings here agree with Lawson and Samson's (2001) argument that: (1) to yield results in a dynamic and uncertain environment, innovation often requires long-term vision and commitment in order for innovation newstream to leverage knowledge to develop the new products, processes and systems that will underlie future success; (2) innovation pervades all aspects of an organisation's existence, from the core value system to the measures and behaviours that are manifested on a daily basis.

H₅: Organisational learning has a significantly positive effect on ambidexterity.

At a critical t value = 2.57, the empirical t value = 9.008 is statistically significant at $\alpha = 0.01$. The null hypothesis is, therefore, rejected. H_5 is statistically supported.

The empirical evidence support the hypothesis that SMP learning positively influences ambidexterity, which underscores the significantly positive effect of organisational learning on the ambidextrous orientation of the SMP ($\beta = 0.411$; t -value = 9.008) - see Table 6.1 (page 182) & Table 5.20 (Appendix D). Because ambidexterity involves exploring new knowledge (to enable the firm develop new services/products, and/or adopt new and efficient ways of delivering services), the ability of an organisation to learn (that is, its absorptive capacity and ability to articulate knowledge) is crucial in fostering organisational ambidexterity. In other words, it could be inferred from the results that organisational learning of the SMP is antecedent to its ambidexterity. This is important as knowledge that relates to potential new service/product offerings to clients, acquired through learning from networks and other sources, could be further explored by the SMP. This is in line with earlier studies which argue that the creation of learning, knowledge-sharing, and knowledge-integrating procedures facilitates ambidexterity, an essential (micro) foundation of DCs (O'Reilly and Tushman 2008), and is fundamental in achieving strategic organisational renewal in an organization (Crossan and Berdrow 2003).

The decision to further explore such new knowledge with the objective to eventually develop and deliver new services would depend on the strategic orientation (strategic view or leadership) of the firm. This is because to explore such new knowledge while also focusing on delivering its core services and/or products (i.e. being ambidextrous), involves cost (financial resources and human capital) to the business. This demonstrates that deploying ambidexterity, a dynamic capability, is an investment decision – a decision made by senior management based on the strategic leadership of the firm. This, again, underscores the importance of strategic leadership/orientation – a first-order dynamic capability – as driver for, or the foundation of, the implementation or deployment of the higher-order DCs within the firm. Similar to these findings, Huang and Wang (2011) posit that a firm's learning orientation must be aligned to its design, strategy, structure, and strategic HRM.

The operational and strategic objectives of the SMP are defined by the short, medium and long term directions it chooses to pursue, that is, its choice of strategic leadership. Such objectives include the firm's ambitions with respect to growth, outlined in its strategic and operational plans. The SMPs in this study explain that specific milestones are indicated in the

operational plans (of up to 12 months) which are reviewed at periodic intervals (some firms have a monthly review of the plan while others perform a quarterly review) to evaluate the achievement of specific key performance indicators (KPIs) set out in the operational and strategic plans. The medium term and long-term strategic plans set out the medium and long-term objectives of the firm but do not contain specific details as these are often difficult to determine.

As noted earlier, two types of SMPs were identified in this study – growth-oriented and non-growth oriented. SMPs that are not growth-oriented have attained a level of growth that is satisfactory to the ownership of the firm. Such firms do not seek to win new work or clients, but seek to maintain or improve the quality of existing services, through individual and collective (organisational) learning, in order to be able to maintain their existing client base. Although these firms do not seek new clients, they still engage and invest in process improvement to increase efficiency, reduce long-term operating costs and enhance client satisfaction. For example, they invest in technology (e.g. cloud accounting) as a necessity to drive service delivery. Although both growth-oriented and non-growth oriented SMPs find it difficult to convince the older generation of clients (especially those that have been in business for about 30 years and over) to accept or embrace the switch to technology, they invest time and effort to explain to these clients the advantages of such a move. Teece (2000) posits that knowledge management may enable a more effective leverage of customer capital (e.g. customer databases) and can be an important component of competitive strategy and foundation for competitive success by assisting the firm in pushing the limits of its business model.

The growth-oriented firms are geared at winning new businesses and gaining critical mass. SMPs achieve this growth either by directly winning new customers (i.e. organic growth) or through acquisition of, or merger with, another SMP. In addition to improving the quality of service and/or product offerings to their existing clientele, these firms also invest in the exploration of new knowledge acquired through learning. Therefore, the growth-oriented SMPs view an ambidextrous orientation as: (1) necessary to enable the firm improve on the quality of services provided; and (2) the foundation for diversification in service/product offering through introduction of new services and/or products. Again, SMPs argue that the ability of the firm to learn (i.e. organisational learning) is the bedrock of a successful ambidextrous orientation. This study's findings generally agrees with Ambrosini and Bowman (2009) who contend that DCs are typically the outcome of experience and learning within the firm, and such capabilities directly impact the resource base of the firm, which in turn is the source of the firm's competitive advantage.

H₆: The existence of alliances & networks positively and significantly influences organisational learning.

H₇: The existence of alliances & networks positively and significantly influences SMP ambidexterity.

At a critical t value = 2.57, the empirical t value = 2.869 is statistically significant at $\alpha = 0.01$. Therefore, the null hypothesis is rejected, and H_6 is statistically supported.

The hypothesis has an empirical t value = 3.520. This empirical t value is larger than the critical t value of 2.57 ($\alpha = 0.01$). This implies statistical significance at $\alpha = 0.01$, thereby rejecting the null hypothesis and supporting H_7 .

The hypotheses that alliances & networks positively influence organisational learning and SMP ambidexterity are supported by results of the study ([i] Alliances & Networks → Learning: $\beta = 0.150$, t -value = 2.869; [ii] Alliances & Networks → Ambidexterity: $\beta = 0.145$, t -value = 3.520) – see Table 6.1 (page 182) & Table 5.20 (Appendix D). Alliances and networks positively and significantly influence organisational learning. This study identified two types of alliances & networks to which SMPs subscribe: formal and informal alliances & networks. This finding is in line with Eisenhardt and Martin (2000) who show that external linkages often take various forms including informal relationships and formal alliances. The formal networks operate on formal contractual terms, unlike the informal networks. However, in both types of alliances & networks, periodic conferences, seminars and discussion forums (groups) are organised, aimed to educate and update members on technical developments in the profession (e.g. relevant regulatory changes, e.g. in accounting standards or tax legislation), and on knowledge in business management relevant to SMPs. Such knowledge in business management includes updates on technological change, use of technology (software) in delivering services, trends in the industry, cross-selling, and ways of winning new businesses (clients). For instance, at a conference for SMPs attended in the course of this research, there were presentations by various experts on successful business management including offshoring, and updates on technology and its use in driving service delivery and efficiency by SMPs. These were followed by a panel discussion, with five participants in each panel, and each participant from a different SMP. Each panellist was encouraged to outline one or two problems facing their firm, and for other panellists to discuss/explain how they had resolved such issues or how they could be resolved. At the end of the discussion, the

panellists in each panel had discussed a comprehensive solution to each of the problems outlined by each participant. Such discussions are beneficial to participants who have to directly learn from the experiences of other accountancy practitioners. This finding agrees with Jiao, Alon, and Cui (2011) who explain that through learning mechanisms, resources are transferred, disseminated, reproduced internally within the organization, as there is an increased understanding of the environment, increased organisational and technical flexibility which, in turn, facilitate the development of DCs.

Some SMPs are also part of informal networks in which member firms benchmark their performance in various areas against each other. With such benchmarking, member firms are able to identify areas in which they underperform their peers, and learn and understand what the other firms do differently, and how they do it. Also importantly, some SMPs have informal networks (usually made up of about 8 firms from across the UK) which enable member SMPs to come together biannually. During each come together, participants (partners and/or directors of member SMPs) arrive the hotel in the evening and, together, wine and dine. The following day, the participants sit together and discuss issues facing their firms, the profession and small businesses. In addition, they identify and discuss ways for improving service quality, retaining clients, winning new businesses, and the provision of non-compliance services to clients. The non-compliance services include value-added services such as advisory and consulting. According to partners/directors who attend these biannual meetings, the meetings are relatively richer in content and more beneficial than many other events organised by their other alliances & networks.

The aforementioned results extend and enhance understanding of the view that alliances or external linkages are important instruments for augmenting a firm's asset base, as they grant access to resources that are external to the firm's boundaries (e.g. Das and Teng 2000), and are crucial to effective knowledge creation (Henderson and Cockburn 1994). These empirical findings also support and enhance Doving and Gooderham's (2008) argument that small accountancy practices should have processes for developing alliances with a range of other services providers. Similarly, other studies find that external linkages such as significant alliance relationships are essential for effective knowledge creation, and led to superior R&D performance within biotech firms (e.g. Powell, Koput, and Smith-Doerr 1996).

H_8 : The existence of alliances and networks positively and significantly influences SMP Innovativeness.

H_7 has an empirical t -value = 1.255. This value is smaller than both the critical t -value of 1.96 ($\alpha = 0.05$), critical t value = 1.65 ($\alpha = 0.10$). The empirical t value is statistically non-significant at $\alpha = 0.05$ and at $\alpha = 0.10$. Therefore, the null hypothesis is not rejected. H_8 is, thus, not statistically supported.

The results do not support the hypothesis that the existence of alliances & networks has a significantly positive influence on SMP innovativeness (see Table 6.1 (page 182) & Table 5.20 (Appendix D)). The results indicate a statistically non-significant influence of alliances and networks on SMP innovativeness ($\beta = 0.067$; t -value = 1.255). Although potential new services and/or products could be identified by the firm's involvement in alliances & networks (e.g. by attending network events), this does not directly translate into the SMP delivering new services/products. This could be explained by the fact that prior to developing and delivering new services and/or products or entering into new markets/location (i.e. innovativeness), the acquired knowledge relating to such services/products would have to be further explored in order to evaluate and understand the following: (i) the specific service and/or product, (ii) the market to be served, (iii) likely impact on performance of existing service delivery, (iv) impact on client satisfaction and retention, (v) resources required to deliver such new services/products, (vi) the ability and capacity of the SMP to successfully deliver such a service/product without negatively impacting on delivery of its core services, (vii) profitability from investing in, and delivering such service/product, (viii) impact on overall performance of the SMP.

Even when the SMP estimates that offering the potential new service or product will have an overall positive effect on the firm's performance, it will still need to take steps to understand or explore ways in which such services could be successfully delivered. Considering that the SMP will continue to offer (exploit) its existing services/products while exploring ways to develop and offer the potential new service/product, it will be deploring its ambidexterity – a dynamic capability. This is important because it demonstrates that the SMP engages in ambidextrous orientation, necessary to bring to fruition the eventual development of a new service/product offering. Thus, the firm's ambidextrous form is influenced by its alliances & networks.

Also, from the qualitative data, it was identified that SMPs use their alliances & networks to source complementary services for their clients. These are services that are not provided in-house by the SMP because they lack the relevant expertise and other relevant resources. While some SMPs give clients access to the complementary services provided by their alliances & network partners by serving as a one-stop-shop, others only recommend their network partners to the client, and let the client and the network partner settle the terms for the work to be done. The one-stop-shop approach to offering services to clients serves as a low level innovativeness for the SMP because although the new (complementary) services are not directly provided by the SMP, it leaves the client feeling satisfied that s/he doesn't need to shop around for solutions to business issues, whether they are compliance or advisory related, as such services are provided by his/her external accountant.

The one-stop-shop approach used by SMPs to offer a broader range of services to their clients explains the positive but non-significant path coefficient for the influence of alliances & networks on SMP innovativeness ($\beta = 0.067$; t -value = 1.255). This finding is supported by the argument that mobilisation and access to resources are deemed important for small firms, therefore, the network of extended relationships surrounding such firms provide a wide range of tangible and intangible benefits (Street and Cameron 2007) such as access to complementary resources (Meyer, Alvarez, and Blasick 1997). The result is also backed by the view that the greater the extent of the external cooperation with other types of service providers (including IT & software providers, consultancies, financial institutions, insurance firms, law firms), the greater the range of services offered (Doving et al. 2004), and that external knowledge acquisition strategies are especially helpful and appear to foster innovation (Zhou and Uhlaner 2009).

H₁₂: Organisational ambidexterity positively and significantly influences firm innovativeness.

At a critical t value = 2.57, the empirical t value = 6.636 is statistically significant at $\alpha = 0.01$. Therefore, the null hypothesis is rejected, and H_{12} is statistically supported.

The research results support the argument (hypothesis) that SMP innovativeness is positively and significantly influenced by its ambidexterity ($\beta = 0.420$; t -value = 6.636) – see Table 6.1 (page 182) & Table 5.20 (Appendix D). Innovativeness requires the SMP to explore new knowledge relating to potential service/product, potential market (clients), resource requirements, impact on the quality and volume of existing service delivery, and impact on

profitability. While further exploring the knowledge relating to potential new service/product offering, the SMP still requires to continue in business, in delivering satisfactory services to its existing client base, that is, it needs to continue exploiting its current know-how in service/product delivery, in order to build on experience, efficiency and improve its performance.

By exploring new knowledge while exploiting its existing know-how, the SMP is deploying its ambidexterity dynamic capability. It is only when the firm has acquired sufficient knowledge of, and expertise in, the potential new service/product that it can be confident to start developing and delivering the new service, that is, its innovativeness kicks in. This shows that ambidexterity is vital for a firm's innovativeness. Also, the positive influence of ambidexterity on a firm's innovativeness is akin to the research and development (R&D) process whereby research relates to the exploration of knowledge (i.e. exploration - the one part of ambidexterity) and precedes development which is the actual production (delivery) of new services/products (i.e. at this point, the firm innovates). Again, this underlines the importance of ambidexterity as antecedent of SMPs innovativeness – an argument advanced in this research, and supported by its empirical results. These findings agree with Knight and Cavusgil (2004) who show that the ability to develop unique products derives from the innovative and knowledge-intensive capabilities of firms, which enable them to create distinctive products - a differentiation strategy involving creation of customer loyalty by uniquely meeting their particular needs.

Table 6.1: Hypothesised Relationships with Path Coefficients, T-Statistics and 95% Confidence Intervals

Hypothesised Relationships	Hypotheses	Path Coefficient	T Statistics (O/STDEV)	95% Confidence Interval (CI)	95% CI - Bias Corrected	Results
Strategic Leadership -> Organisational learning	H_{2a}	0.597***	13.788	0.511, 0.682	0.504, 0.676	Supported
Strategic Leadership -> Alliances & Networks	H_{2b}	0.488***	10.929	0.404, 0.574	0.394, 0.565	Supported
Strategic Leadership -> Ambidexterity	H_{2c}	0.368***	7.664	0.270, 0.458	0.267, 0.456	Supported
Strategic Leadership -> Innovativeness	H_{2d}	0.366***	7.001	0.266, 0.471	0.266, 0.472	Supported
Organisational learning -> Ambidexterity	H_5	0.411***	9.008	0.320, 0.500	0.318, 0.498	Supported
Alliances & Networks -> Organisational learning	H_6	0.150***	2.869	0.044, 0.248	0.046, 0.249	Supported
Alliances & Networks -> Ambidexterity	H_7	0.145***	3.520	0.066, 0.227	0.067, 0.228	Supported
Alliances & Networks -> Innovativeness	H_8	0.067 ^{Nsig}	1.255	-0.036, 0.171	-0.036, 0.170	Not supported
Ambidexterity -> Innovativeness	H_{12}	0.420***	6.636	0.287, 0.538	0.286, 0.535	Supported

Nsig = Non significant; * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

6.3 THE EFFECTS OF CONTROL VARIABLES ON THE DIRECT DCs → DCs RELATIONSHIPS

6.3.1 The control effects of firm Age

The model qualities haven evaluated and presented in Appendix H. Also, as explained in chapter 5, the effects of the control variables are analysed using multi-group analysis (MGA) with SmartPls.

6.3.1.1 Evaluation of Differences in Path Relationships between SMPs Age-Groups

A comparison of the Age-specific path coefficients shows a number of differences between the two groups of SMPs. For instance, the SMPs in Age-Group-3 (SMPs in existence for more than 20 years) exhibit greatest comparative effect over Age-Group-1 (SMPs in existence for 10 years or less) in the following three path relationships: ambidexterity → innovativeness [diff = 0.125]; Strategic Leadership → Learning [diff = 0.175]; Strategic Leadership → alliances & networks [diff = 0.099]; and strategic leadership → ambidexterity [diff = 0.139]. On the other hand, Age-Group-1 exhibits greatest comparative effect over Age-Group-3 in the path coefficient for the relationships: strategic leadership → innovativeness [diff = 0.238]; and learning → ambidexterity [diff = 0.122]. The statistics are presented in Figure 5.4 (page 154).

Table 6.2: Results of model test for the control effects of SMP Age-groups

Hypothesised Relationships	Path Coeff (AGE-1 [0 - 10])	Path Coeff (AGE-3 [>20])	t-Values (AGE-1 [0 - 10])	t-Values (AGE-3 [>20])	p-Values (AGE-1 [0 - 10])	p-Values (AGE-3 [>10])
Strategic Leadership → Learning	0.331****	0.506****	3.250	7.200	0.001	0.000
Strategic Leadership → Alliances & Networks	0.436****	0.536****	3.798	10.093	0.000	0.000
Strategic Leadership → Ambidexterity	0.216**	0.355****	2.189	6.096	0.029	0.000
Strategic Leadership → Innovativeness	0.528****	0.290****	6.509	4.329	0.000	0.000
Learning → Ambidexterity	0.551****	0.429****	6.161	7.442	0.000	0.000
Ambidexterity → Innovativeness	0.372****	0.497****	3.657	7.965	0.000	0.000
Alliances & Networks → Ambidexterity	0.089	0.180****	1.004	3.203	0.315	0.001
Alliances & Networks → Innovativeness	0.013	0.094	0.159	1.370	0.873	0.171
Alliances & Networks → Learning	0.281****	0.197****	2.830	2.614	0.005	0.009

* p < 0.10; ** p < 0.05; *** p < 0.01; **** p < 0.001

Table 6.2 above presents the statistical significance of path relationships for firms in Age-Group-1 and Age-Group-3.

6.3.1.2 Significance of differences in Path Coefficients between SMPs by Age-Groups

The statistical difference and significance between each path relationship between the two SMP age groups are presented in Table 6.3 below, with the empirical results subsequently discussed.

Table 6.3: Multi-Group Comparison results for SMP Age-groups

Hypothesised Relationships	Comparison Age-Groups [of SMPs]	diff	p-Value (AGE-1 [<20Y] vs AGE-3 [>20Y])	Results
Strategic Leadership → Org Learning	AGE-1 vs AGE-3	0.175	0.924*	Significant difference
Strategic Leadership → Alliances & Networks	AGE-1 vs AGE-3	0.099	0.779	Non-significant difference
Strategic Leadership → Ambidexterity	AGE-1 vs AGE-3	0.139	0.887	Non-significant difference
Strategic Leadership → Innovativeness	AGE-1 vs AGE-3	0.238	0.010***	Significant difference
Org Learning → Ambidexterity	AGE-1 vs AGE-3	0.122	0.128	Non-significant difference
Ambidexterity → Innovativeness	AGE-1 vs AGE-3	0.125	0.85	Non-significant difference
Alliances & Networks → Ambidexterity	[AGE-1 vs AGE-3]	0.091	0.808	Non-significant difference
Alliances & Networks → Innovativeness	AGE-1 vs AGE-3	0.081	0.773	Non-significant difference
Alliances & Networks → Org Learning	AGE-1 vs AGE-3	0.084	0.246	Non-significant difference

*Significance at 0.10; **Significance at 0.05; ***Significance at 0.01

Table 6.3 above shows the statistical significance of differences between young firms (Age-Group-1) and older firms (Age-Group-3) in DCs → DCs relationships

The influence of strategic leadership on innovativeness is significantly different between SMPs in Age-Group-1 (younger SMPs) and SMPs in Age-Group-3 (older SMPs).

The results show that there is a significant difference [at $\alpha = 0.01$] in the effect of strategic leadership on innovativeness between SMPs in Age-Group-1 and SMPs in Age-Group-3 [diff = 0.238; p-value = 0.010]. This indicates that the effect of strategic leadership on innovativeness for SMPs in Age-Group-1 is significantly stronger than is the case for SMPs in Age-Group-3. See table 6.3.

The empirical results support the hypothesis that the effects of strategic leadership on SMP innovativeness is significantly different between SMPs that are up to 10 years old (SMP Age-

group-1, also known as younger SMPs) and SMPs that are over 20 years old (SMP Age-group-3, also known as older SMPs), with the effect significantly stronger in younger SMPs than in older SMPs. The younger SMPs are likely to be smaller in size than the older and well established SMPs. This means that the younger SMPs will have a flat (lean or horizontal) management structure with few or no levels of middle management between the staff and partners (directors), and particularly with often very few staff. Therefore, the significantly stronger effect of strategic leadership on innovativeness in younger SMPs is occasioned by such horizontal structure which enables the director (senior management) to be directly involved in the quality and types of services offered by the firm, and to take the necessary measures to enable the firm provide new services, in order to increase its client base and revenue. This is supported by the argument that because of fewer [lesser] friction and politics in young firms, there is greater tolerance for employees adaptation in younger than older firms (Arend 2014).

Furthermore, because younger SMPs have a less well established client base, they are less selective in accepting new clients, and because such firms are ready to seize on opportunities to increase their client base, they would be willing to readily accept new clients. To serve the broad spectrum of clients would require management's creative input, at directly initiating and introducing new services, and in ensuring the effective delivery of such new services. Similarly, where the use of technology to deliver services leads to firm innovativeness, as in process innovativeness, the decision to acquire such technology, including its required functionality, will be the direct responsibility of the directors of younger SMPs.

The result is supported by the analysis which also shows that younger SMPs than older SMP, adopt a competitive posture that aims to overtake competitors,¹¹¹ and believe that the business environment requires wide-ranging measures to achieve the firm's objectives.¹¹² Consequently, these younger firms, than their older counterparts, have been better at developing new management approaches and/or methods to enable them achieve their corporate objectives.¹¹³ Arend (2014) posits that in younger firms, employees are motivated about the successful adaptation of the firm to environmental changes since they are more likely to have either a financial stake (equity) in the business or aspire to achieve increased management experience as the firm expands.

¹¹¹ Indicator (SL_05) loadings: Age-group-1 [younger SMPs] = 0.886; Age-group-3 [older SMPs] = 0.883.

¹¹² Indicator (SL_06) loadings: [younger SMPs] = 0.853; [older SMPs] = 0.796.

¹¹³ Indicator (IN_02) loadings: [younger SMPs] = 0.708; [older SMPs] = 0.699.

The influence of strategic leadership on organisational learning is significantly different between younger SMPs and older SMPs.

At $\alpha = 0.10$, the path coefficient strategic leadership \rightarrow learning is significantly different between SMPs in Age-Group-1 and SMPs in Age-Group-3, with the effect of strategic leadership on learning for SMPs Age-Group-3 being significantly stronger than that for SMPs in Age-Group-1 [diff = 0.175; p-value = 0.924]. See Table 6.3.

The effect of strategic leadership on organisational learning is significantly different between younger SMPs and older SMPs, with a significantly larger effect in older SMPs ($\beta = 0.506$) than in younger SMPs ($\beta = 0.331$) – see Table 6.2 (page 184). This is explained by the fact that the older firms, likely to have a bigger resource base than younger firms, are more able to afford the financial cost of training and other learning that are necessary for their employees. The larger expenditure on learning by the older firms is also due to the fact that these firms, rather than the younger firms, consider employee learning as an investment, and not an expense.¹¹⁴ This is in line with the argument that to maintain DCs is expensive and involves long-term commitment to specialised resources (Winter 2003; Zollo and Winter 2002).

Also, because of their longer presence in the market, older SMPs could have a better understanding of the market, and of the knowledge requirements of the firm. This will enable the older SMP to use its resources to engage in more targeted learning that could be more effective and beneficial to the firm. Because the younger SMPs are new in the market, they may not have adequate resources to purchase all the learning and training necessary for their employees, especially if such learning is not limited to knowledge around existing expertise or service delivery. Therefore it is not surprising that the older firms¹¹⁵ could have better organisational systems and procedures to support learning,¹¹⁶ and have learned much new knowledge in the three years to the conduct of this study.¹¹⁷ In this regard, as a firm's learning capabilities may enable environmental adaptation by facilitating organisational learning and effective innovativeness, the importance of learning in improving organisational effectiveness and performance is a key organisational competency and practice (Huang and Wang 2011).

¹¹⁴ Indicator (LE_02) loadings: [younger SMPs] = 0.652; [older SMPs] = 0.758.

¹¹⁵ In the 3 years to this study.

¹¹⁶ Indicator (LE_06) loadings: [younger SMPs] = 0.748; [older SMPs] = 0.788.

¹¹⁷ Indicator (LE_09) loadings: [younger SMPs] = 0.787; [older SMPs] = 0.844.

DCs → DCs path relationships with non-significant difference between firms in Age-Group-1 and Age-Group-3

Although there are differences in all other path relationships between younger SMPs (age-group-1) and older SMPs (age-group-3) not mentioned above, such differences are non-significant. This implies that the related hypotheses have not been statistically supported. This could be explained by the fact that although an SMP (as a firm or entity) may have been operating for many years, in certain cases, the ownership of the firm may be recent, as it could have resulted from an acquisition. Because of the need to benefit from the goodwill (an intangible asset) in the acquired firm, especially its established reputation and track record, the acquirer may decide to maintain the registered trading name of the firm.¹¹⁸ The important difference between firms in professional services, especially accountancy firms, and firms in other industries (e.g. manufacturing) is that: the accountancy practice industry is knowledge-based, and the assets paid for by the acquirer are mainly the clients of the acquired firm; in the manufacturing industry, property, plant, and machinery will constitute an overwhelming majority of the assets acquired. Therefore, although an accountancy firm (SMP) may have existed as an entity for about seventy (70) years, for example, the current ownership of the firm may be very recent. See Table 6.3.

6.3.2 The control effects of firm size

The aggregate model used for assessing the significance of the moderating role of SMP size comprised of: Size-Group-1 (1-9 employees): n = 202; Size-Group-2 (10-49 employees): n = 88. SMPs with 50 to 249 employees were left out of this analysis because of their small sample size (n = 25). Also, it was not considered appropriate to include these firms into Size-group-2 as doing so could have impacted on the interpretation of the results.

The model qualities criteria have been evaluated and all thresholds were satisfactory. See Appendix I.

¹¹⁸ That is, the acquired firm.

6.3.2.1 Assessment of SMP size-group specific Path Coefficients

The parameter estimates illustrate that one path relationship in SMPs size-group-2 is nonsignificant (i.e. alliances & networks → Learning ($\beta = 0.118$, $t = 1.106$). All other path coefficients in size-group-2 are significant. On the other hand, one path relationship in size-group-1 is nonsignificant (i.e. alliances & networks → innovativeness ($\beta = 0.012$, $t = 0.190$). All other path relationships in size-group-1 are significant. See Figure 5.5 (page 158), and Table 6.4 below.

Table 6.4: Results of model test for the control effects of SMP Size-groups

Hypothesised Relationships	Path Coeff SIZE - Group 1	Path Coeff SIZE - Group 2	t-Values (Size-Group-1)	t-Values (Size-Group-2)	p-Values (Size-Group-1)	p-Values (Size-Group-2)
Strategic Leadership → Org Learning	0.570****	0.592****	10.531	6.810	0.000	0.000
Strategic Leadership → Alliances & Networks	0.449****	0.531****	7.767	7.440	0.000	0.000
Strategic Leadership → Ambidexterity	0.324****	0.270***	5.304	2.769	0.000	0.006
Strategic Leadership → Innovativeness	0.394****	0.249***	5.999	2.645	0.000	0.008
Org Learning → Ambidexterity	0.440****	0.512****	7.824	5.888	0.000	0.000
Ambidexterity → Innovativeness	0.424****	0.426****	5.281	4.827	0.000	0.000
Alliances & Networks → Learning	0.148**	0.118	2.326	1.106	0.020	0.269
Alliances & Networks → Ambidexterity	0.148***	0.138**	2.668	1.988	0.008	0.047
Alliances & Networks → Innovativeness	0.012	0.267***	0.190	3.129	0.849	0.002

** $p < 0.05$; *** $p < 0.01$; **** $p < 0.001$

In Table 6.4 above, the statistical significance of path relationships for firms in Size-group-1 and Size-group-2 are presented.

A comparison of the Size-specific path coefficients shows absolute difference between each path coefficient for the two groups of SMPs. For instance, the SMPs in Size-Group-1 [firms with 1-9 staff] exhibit greatest comparative effect over Size-Group-2 [SMPs with 10-49 staff] in the following two path relationship: strategic leadership → innovativeness [diff = 0.145]. On the other hand, Size-Group-2 exhibits greatest comparative effect over Size-Group-2 in

the path relationships: alliances & networks → innovativeness [diff = 0.255]; strategic leadership → alliances & networks [diff = 0.082]; learning → ambidexterity [diff = 0.073]. All the other path coefficients (not indicated above) exhibit differences from 0.002 to 0.055 between the two size-groups. The statistics are also presented in Figure 5.5 (page 158).

6.3.2.2 Statistical Significance of differences in Path Coefficients between SMPs by Size-Group

The influence of alliances & networks on innovativeness is significantly different between SMPs in Size-Group-1 and Size-Group-2.

At $\alpha = 0.05$ [p-value = 0.991], the effect of alliances & networks on innovativeness for SMPs in Size-Group-2 is significantly stronger than is the case for SMPs in Size-Group-1. See Table 6.5.

The results suggest that there is a significantly stronger positive influence of alliances & networks on SMP innovativeness for small SMPs¹¹⁹ ($\beta = 0.267$) than for micro SMPs¹²⁰ ($\beta = 0.012$) – see Table 6.4. Because of their size, it is easier for small SMPs than for the micro SMPs to establish alliances & networks with accounting firms of similar or bigger size, and/or with other SMEs that are not accountancy firms. The larger the number of accountancy firms in the network, the wider the range of services provided by the network that the SMP will be exposed to, or become aware of. Furthermore, because other SMEs (non-accountancy firms) in the network are bigger than micro firms, they are likely to be engaged in different product or service lines than the micro SMEs. Because the small SMPs are more endowed with resources than micro SMPs, they can quickly alter their processes or methods of delivering services to clients. An example of this is in the area of technology where direct knowledge gained from the network could be used for process innovation. Such process innovation includes use of technology (cloud accounting) to deliver services to clients.¹²¹ Even where cloud accounting has already been adopted, the fast moving pace of technology may mean that SMPs update or even replace their existing software for another with more functionalities

¹¹⁹ Small accounting practices with 10-49 employees.

¹²⁰ Accounting practices with 1-9 employees.

¹²¹ For example, from using Sage 50 – a desktop accounting software, to the use of Xero – an online/cloud accounting software.

and/or more security.¹²² However, since the investment to update or replace the software comes at a cost, the small SMPs, than the micro SMPs, would be in a better position to meet the cost of such an investment.

This result agrees with the view that for a firm to survive in the current global, complex, and rapidly changing environment, it needs to be entrepreneurial, take risks, and be innovative in ideas, products, processes, and services (Huang and Wang 2011; Fairoz, Hirobumi, and Tanak 2010). More importantly, the results also fall in line with the argument that unlike large firms with huge resources that can be used for creation of new knowledge, small firms are more dependent on external sources for development of new knowledge and product/service (Wang, Wang, and Horng 2010).

DCs → DCs path relationships with non-significant difference between the two SMP size groups

All other absolute differences in specific path coefficients between micro SMPs and small SMPs not indicated above are non-significant. The likely explanations for the non-significant differences are given below:

The non-significant differences in these path relationships could be due to the fact that in the accountancy practice sector, the bulk of education and training providers are accessible to the micro SMPs as they are to the small SMPs. This is because these providers are usually external organisations providing periodic seminars and/or conferences to which individual SMPs can subscribe to, or pay to attend specific sessions. As the fees are usually based on the number of attendees, the micro SMPs which are likely to have fewer attendees would be capable of meeting the cost of attending the training seminars/conferences, just like the small and other bigger size SMPs.

Also, the partners or directors of both micro and small SMPs are qualified accountants, and undergo the same professional accountancy education and pass the same professional exams in order to obtain the professional accountancy qualification. Thus, in terms of education,

¹²² For example: a move from the use of Liberty online accounting software to Quickbooks online accounting software.

there is hardly any difference between partners/directors of micro SMPs and those in small SMPs.

Furthermore, networking events (organised by various accountancy bodies in the UK such as ACCA, ICAEW, and ICAS)¹²³ and seminars (provided by private firms) are available to relevant member firms of all sizes, and are affordable by almost all SMPs. Although there could be differences in the experience gained, leading to becoming a qualified accountant (Chartered or Certified), the business knowledge and skills required to develop, maintain, and deploy DCs are accessible to all SMPs, as it is provided by external providers, occasionally for free,¹²⁴ or periodically for a fee.¹²⁵ Therefore, differences in the development, maintenance and deployment of DCs between SMPs could be the result of the growth ambition of the specific firm. Table 6.5 summarises the results of the hypotheses tests.

Table 6.5: Multi-Group Comparison results for SMP Size-groups

Hypothesised Relationships	Comparison SIZE [No of Employees]	diff	p-Value (SIZE-1 [1-9] vs SIZE-2 [10-49])	Results
Strategic Leadership → Org Learning	[1-9] Vs [10-49]	0.021	0.588	Non-significant difference
Strategic Leadership → Alliances & Networks	[1-9] Vs [10-49]	0.081	0.813	Non-significant difference
Strategic Leadership → Ambidexterity	[1-9] Vs [10-49]	0.055	0.318	Non-significant difference
Strategic Leadership → Innovativeness	[1-9] Vs [10-49]	0.145	0.102	Non-significant difference
Org Learning → Ambidexterity	[1-9] Vs [10-49]	0.073	0.760	Non-significant difference
Ambidexterity → Innovativeness	[1-9] Vs [10-49]	0.002	0.507	Non-significant difference
Alliances & Networks → Org Learning	[1-9] Vs [10-49]	0.030	0.408	Non-significant difference
Alliances & Networks → Ambidexterity	[1-9] Vs [10-49]	0.010	0.457	Non-significant difference
Alliances & Networks → Innovativeness	[1-9] Vs [10-49]	0.255	0.991**	Significant difference

* Significant at 0.10; ** Significant at 0.05

¹²³ The networking events by the Accountancy bodies are available to registered members (qualified accountants) who are obliged to fulfil specific CPD requirements if they are to continue exercising their profession as registered practising accountants.

¹²⁴ For example: Accountex Annual conference; networking events and seminars by accountancy bodies.

¹²⁵ E.g. periodic seminars and conferences provided by 2020 Innovation.

Table 6.5 shows the statistical significance of differences in path relationships between micro firms (Size-group-1) and small firms (Size-group-2).

6.3.3 The control effects of competitive intensity (market turbulence)

The model qualities were evaluated and all quality criteria thresholds were met. See Appendix J.

6.3.3.1 Statistical Significance of specific Path Coefficients for SMPs in I_COM-y & I_COM-n Groups

A comparison of the path relationships between SMPs in *I_COM-y* and SMPs in *I_COM-n* shows a number of differences between the two groups of SMPs. For instance, the SMPs in *I_COM-n* exhibit greatest comparative effect over SMPs in *I_COM-y* in the path relationship: alliances & networks → innovativeness [diff = 0.131]; alliances & networks → learning [diff = 0.105]. On the other hand, SMPs in *I_COM-y* demonstrate greatest comparative effect over *I_COM-n* in the path relationships: ambidexterity → innovativeness [diff = 0.097]; alliances & networks → organisational learning [diff = 0.105]. All the other path coefficients (not indicated above) exhibit differences from 0.033 to 0.076 between the two groups. The statistics are presented in Figure 5.6 (page 164) and Table 6.6 below.

Table 6.6: Results of model test for the control effects of I_COM subgroups

Hypothesised Relationships	Path Coeff	Path Coeff	t-Values	t-Values	p-Values	p-Values
	[I_COM-n]	[I_COM-y]	[I_COM-n]	[I_COM-y]	[I_COM-n]	[I_COM-y]
Strategic Leadership → Org Learning	0.544****	0.596****	5.653	11.894	0.000	0.000
Strategic Leadership → Ambidexterity	0.384****	0.338****	4.993	5.532	0.000	0.000
Strategic Leadership → Innovativeness	0.394****	0.361****	3.531	6.311	0.000	0.000
Strategic Leadership → Alliances & Networks	0.517****	0.441****	5.869	7.884	0.000	0.000
Org Learning → Ambidexterity	0.391****	0.409****	4.877	6.927	0.000	0.000
Ambidexterity → Innovativeness	0.343***	0.440****	2.571	6.715	0.010	0.000
Alliances & Networks → Org Learning	0.209**	0.104*	2.083	1.644	0.037	0.100
Alliances & Networks → Ambidexterity	0.208***	0.175****	3.090	3.470	0.002	0.001
Alliances & Networks → Innovativeness	0.177**	0.046	2.405	0.678	0.016	0.498

* p < 0.10; ** p < 0.05; *** p < 0.01; **** p < 0.001

Table 6.6 above presents the specific path coefficients and related t-statistics for SMPs per perceived competitive intensity (I_COM) subgroups.

6.3.3.2 Significance of differences in Path Coefficients between I_COM-y & I_COM-n

The results show that there is a significant difference in a number of path coefficients between latent constructs for SMPs who perceive the industry to be intensely competitive (I_COM-y) as opposed to those that do not (I_COM-n). These path relationships are:

- (1) At $\alpha = 0.10$ [p-value = 0.096], the effect of alliances & networks on innovativeness for SMPs in I_COM-n is significantly stronger than is the case for SMPs in I_COM-y. See table 6.7.

These results suggest that there is significantly more positive influence of alliances & networks on SMP innovativeness for SMPs that perceive that the market is not competitively intensive (i.e. perceived less market turbulence) ($\beta = 0.177$) than for those that perceive the market to be competitively intensive ($\beta = 0.046$) – see table 6.6 and Fig 5.6 (page 164). The perception of less competition by firms signals the perception of a more or less stable market environment in which the firms operate, and in which it is possible for efficiencies to be generated from established structures and routines. In line with this, Battisti and Deakins (2017) posit that in stable environments, older firms can generate efficiencies from their valuable resources, established structures and routines.¹²⁶

Also, if the perception of a less competitive environment indicates an environment that is changing but not rapidly changing, that is, a moderately changing environment or an environment with moderate competition, then the deployment of DCs by the SMPs in such an environment will result in greater benefits to the firm – hence the greater impact of alliances & networks on innovativeness for these SMPs. This is consistent with Schilke's (2014a) position that in low and high level of environmental turbulence, the link between DCs and competitive advantage is relatively weaker, but that such relationship is strongest when environmental dynamism are at moderate levels.

On the other hand, SMPs that perceive the market to be competitively intensive (i.e. a very turbulent market), signal the perception of a rapidly changing environment. In such environments, the frequent reconfiguration of routines, or the rigidities in such firms, will disrupt the efficiency gains from DCs – hence the less positive effect of alliances & networks on innovativeness for these firms. This is in line with the argument that the positive effect of operational capabilities on performance is likely to be negatively moderated by environmental turbulence (e.g. Schreyogg and Kliesch-Eberl 2007; Pavlou and El Sawy 2006), especially when inertia and unwillingness to reconfigure operational capabilities result in rigidities (Leonard-Barton 1992), or when efficiency of such capabilities are disrupted by frequent reconfigurations (Zammuto 1988).

The differences in other path coefficients (not indicated above) between the two I_COM sub-groups are statistically non-significant. Table 6.7 summarises the empirical results of the

¹²⁶ It is worth noting that the age of SMPs was not considered in analysing the perception of market turbulence on the effects of deployment of dynamic capabilities. This was because of mandatory limitation to the volume of this Thesis.

statistical difference between path relationships in the groups of perceived competitive intensity.

Table 6.7: Multi-Group Comparison results for SMPs in I_COM subgroups

Hypothesised Relationships	Comparison	diff	p-Value	Results
	I_COM-n [NO] Vs I_COM-y [YES]		I_COM-y [YES] Vs I_COM-n [NO]	
Strategic Leadership → Org Learning	[NO] Vs [YES]	0.053	0.674	Non-significant difference
Strategic Leadership → Ambidexterity	[NO] Vs [YES]	0.046	0.322	Non-significant difference
Strategic Leadership → Innovativeness	[NO] Vs [YES]	0.033	0.392	Non-significant difference
Strategic Leadership → Alliances & Networks	[NO] Vs [YES]	0.076	0.231	Non-significant difference
Organisational Learning → Ambidexterity	[NO] Vs [YES]	0.018	0.562	Non-significant difference
Ambidexterity → Innovativeness	[NO] Vs [YES]	0.097	0.740	Non-significant difference
Alliances & Networks → Org Learning	[NO] Vs [YES]	0.105	0.185	Non-significant difference
Alliances & Networks → Ambidexterity	[NO] Vs [YES]	0.033	0.346	Non-significant difference
Alliances & Networks → Innovativeness	[NO] Vs [YES]	0.131	0.096*	Significant difference

* $p < 0.10$; ** $p < 0.05$

Table 6.7 presents the statistical significance of differences in path relationships between firms which perceive competition to be intensive and those that do not.

6.4 EVALUATION OF IMPORTANCE AND PERFORMANCE OF DCs CONSTRUCTS IN RELATION TO FIRM PERFORMANCE

6.4.1 Overview

Standardised PLS results show the estimated coefficients between latent variables in the structural model. The size of the standardised path coefficients in the structural model allows

us to determine the relative importance of one construct to explain another. The Importance-Performance Matrix Analysis (IPMA) adds performance values for every latent variable in the structural model. The performance values are the average value of the latent construct scores on a scale from 0 (zero) to 100. The closer the scale is to 100, the higher the performance of the latent variable.

By adding the performance dimension to the PLS results, we can better interpret the outcomes. By focusing on the key target construct, the IPMA identifies constructs that should receive highest priority for performance improvement and, as a result, the performance of the key target construct also increases.

6.4.2 Importance-Performance Matrix Analysis for firm (SMP) Performance

The unstandardized total effects for each latent construct on the target construct (construct of interest) – firm performance – represents the importance of that latent construct in the outcome of the target construct.¹²⁷ Thus, the estimates for the constructs’ unstandardized total effects and performances for the target construct, SMP performance, are: strategic leadership total effects = 0.616, performance = 65.816); alliances & networks [total effects = 0.102, performance = 51.017); ambidexterity (total effects = 0.447, performance = 68.466); Innovativeness (total effects = 0.310, performance = 51.998); Learning (total effects = 0.410, performance = 76.845). These figures are shown in Table 6.8, and are represented in Figure 6.1.

Table 6.8: Construct (LV) Total Effects and Performances towards firm Performance

	[A] Total Effects on Target construct: [Performance]	[B] LV Performances
Alliances & Networks	0.102	51.017
Ambidexterity	0.447	68.466
Innovativeness	0.310	51.998
Organisational Learning	0.419	76.845
Strategic Leadership	0.616	65.816

A: Unstandardized total effects; **B:** LV performances are % (scale: 0 to 100)

¹²⁷ That is, SMP performance in this instance.

As shown in Table 6.8, the unstandardized total effects of each latent DC construct on SMP performance are presented in column A. In column B, the performance of each DC construct on SMP performance is provided. These estimates are plotted and represented in the graph in Figure 6.1.

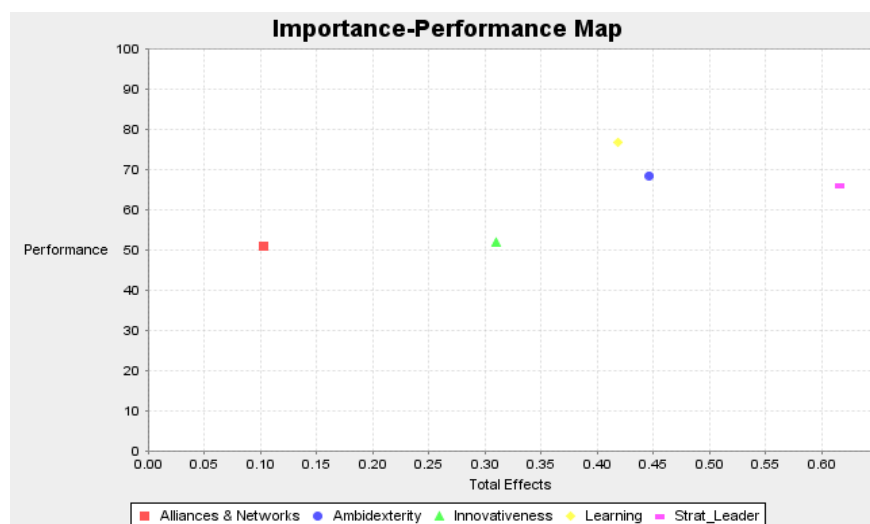


Figure 6.1: Importance-Performance Map for latent constructs on SMP performance.

The data used in the graph in Figure 6.1 are those presented in Table 6.8.

The performances of the latent constructs are plotted on the vertical axis, while importance (total effects) is plotted on the horizontal axis in Figure 7.5 above. The implication of the importance-performance relationship of each latent construct to SMP performance (the target construct in this analysis) is that a one (1) point increase in a latent construct's performance will lead to an increase in SMP performance by the size of the unstandardized total effects of the latent construct.

As shown, the strategic leadership construct has the greatest importance (largest total effects of 0.616) but has a performance of 65.816 [i.e. 65.82%]. With one (1) point increase in the performance of strategic leadership, SMP performance will increase by the value of the total effects of strategic leadership on performance, that is, by 0.616. Put simply, a one point increase in strategic leadership's performance (from 65.816 to 66.816) increases SMP performance from 49.7 to 50.316 (i.e. $49.7 + 0.616$). Equally important, the latent construct, innovativeness, has high importance but performs only at 51.998 [i.e. 51.99%], a one point increase in its performance (from 51.998 to 52.998) will result in 0.310 (its total effects)

increase in SMP performance (from 49.7 to 50.01). The same interpretation could be applied to the latent construct of ambidexterity, where a point increase in its performance will lead to a 0.447 increase in SMP performance. On the other hand, a point increase in performance of the latent construct alliances & networks will lead to an increase in SMP performance by only 0.102 – a relatively small increase when compared to the total effects of the other latent constructs.

6.4.3 Implication of the importance and performance of DCs contribution to performance

From the empirical results presented in the preceding section, it could be seen that for SMP performance to be improved, management should give priority, first and foremost, to improving the performance of strategic leadership (orientation). This is because strategic leadership is the independent variable, the first-order DC, and DC that exhibits greatest importance in the structural model aimed at achieving competitive advantage and sustained performance improvement. This is because although there is interplay between the higher-order DCs (organisational learning, ambidexterity, alliances & networks, and innovativeness) in the model designed to propel the SMP to sustained competitive advantage, with all of them contributing to SMP performance, the deployment of these higher-order DCs is dependent on the firm's strategic leadership – itself a first-order dynamic capability.

Hence, strategic leadership having the largest total effects (of 0.616) on SMP performance, above all other DCs in the research model, is illustrative of its contribution to the explained variance (R^2) in those DCs and to that of the firm's overall performance. This is highlighted by the analysis of the extent of contribution (the effect size (f^2)) of strategic leadership to the explained variance of the higher-order DCs (alliances & networks: $f^2 = 0.398$; organisational learning: $f^2 = 0.705$; ambidexterity: $f^2 = 0.173$; and innovativeness: $f^2 = 0.168$) - See Table 5.15 (page 143). These contributions range from medium to very large effects.

Furthermore, ambidexterity has the second largest total effects (of 0.447) on SMP performance, achieved through its direct contribution to performance ($f^2 = 0.023$), and its indirect contribution through innovativeness ($f^2 = 0.310$). With a point increase in ambidexterity, SMP performance will increase by 0.447, to 50.147 (i.e. $49.7 + 0.447$). Thus, although ambidexterity is performing at 68.46%, an improvement of its performance to about

75% (that is by six points), will have the effect of making an additional contribution of 2.682% (i.e. $6 * 0.447$) to the performance of the SMP.

Also, innovativeness, with its total effects of 0.310 on SMP performance only performs at 51.99%. This implies that if the SMP could leverage its innovative capacity to increase its performance, *ceteris paribus*, the overall performance of the firm will be improved. The firms could benefit from the already high performance of ambidexterity to increase the performance of their innovativeness. This is especially so since ambidexterity has a greater direct contribution to innovativeness ($f^2 = 0.310$), than any other dynamic capability (alliances & networks → innovativeness: $f^2 = 0.004$; strategic leadership → innovativeness: $f^2 = 0.168$).

Overall, the results of the importance and performance of dynamic capability constructs in the model show the different degrees to which constructs are important in contributing to SMP competitive advantage and improved performance, and how they perform, with all constructs performing below 70%, except organisational learning. A successful strategy for SMPs that will enable sustainable competitive advantage as well as improved performance is to maximise performance not just of one dynamic capability construct, but of all four constructs that exhibit performance of less than 75% (i.e. strategic leadership, ambidexterity, innovativeness, and alliances & networks). This is because an increase in the performance of strategic leadership as the exogenous construct and first-order dynamic capability will have a direct impact on: (1) the performance of the SMP; (2) the performance of ambidexterity, innovativeness, and alliances & networks as endogenous constructs and higher-order DCs within the SMP. This is in addition to its direct effects on organisational learning. These agree with Duh (2013) who posit that entrepreneurial thinking and functioning are critical in a dynamic environment, considering that long-term development and success of an organisation is only possible with entrepreneurial initiatives developed at all levels of the organisation, as well as persistent determination to achieve very demanding organisational goals.

Also, the direct effects of ambidexterity on SMP performance, and its indirect effects (through innovativeness) will increase with an improvement in the SMP's simultaneous and balanced exploitation of existing competencies and exploration of new knowledge, that is, its ambidexterity. In the same vein, and although exhibiting the lowest total effects, an improvement in establishing alliances & networks as well as in the use of such alliances & networks by SMPs will indirectly and positively impact on SMP performance through organisational learning, ambidexterity, and innovativeness as endogenous DCs. The results

here are in line with argument that ambidexterity is rooted in the ability to explore and exploit, with individuals being important sources of a firm's effective ambidexterity (Raisch et al. 2009), and on which an enterprise's long-term success depends (Levinthal and March 1993; March 1991).

Therefore, improving the performance of its DCs of strategic leadership, ambidexterity, innovativeness, and alliances & networks, while maintaining (or improving) the high performance of organisational learning, will enable the SMP to take a proactive posture and to make prompt and appropriate decisions to enable it quickly adapt to environmental turbulence. By so doing, the direct effects and multiplier effects (through indirect effects) of the improvement in performance (configuration, reconfiguration, and deployment) of these DCs are to give the SMP a competitive edge in the market and to ensure continuous and sustained improvement in its overall performance. These results are backed by the view that a firm's strategic posture enables it to interpret its changing environment, and to adapt to such changes (Porter 1985; Mintzberg 1978), and a strategic posture that serves as a regenerative DCs is important to small firms (Battisti and Deakins 2017), considering their resource limitation (Smallbone et al. 2012). Also, the results are supported by the argument that for an organisation to adequately and promptly respond to change in its competitive environment and build its competitive advantage, it needs to use its DCs of strategizing and execution excellence (Teece 2012), to identify the challenges posed by such environments prior to deciding on an effective policy approach (Rumelt 2011). Equally important, the results agree with Henderson and Cockburn (1994) who contend that firms that invest in structures focusing explicitly on improving its competencies will significantly outperform competitors that do not do so.

6.5 CHAPTER SUMMARY

In this chapter, the hypotheses relating to the direct relationships between DCs constructs were tested. The empirical results do not support one of the hypotheses: alliances & networks → innovativeness. All the other hypotheses are supported.

Additionally, the control effects of SMP age, SMP size, and market turbulence, on the direct relationship between DCs constructs were analysed using SmartPLS's Multi-Group Analysis (MGA) function. The results show a number of path relationships (coefficients) with

significant differences between SMP size groups, and between SMP age groups. Significant differences were also identified in a number of path relationships between SMPs in terms of their perception of the intensity of competition.¹²⁸

Furthermore, the importance and performance of the DCs constructs vis-à-vis SMP performance were analysed using SmartPLS's IMPA function. The results show strategic leadership as the most important dynamic capability construct considering it makes the largest contribution to SMP performance.

¹²⁸ That is, their perception of market turbulence.

CHAPTER 7: THE INDIRECT RELATIONSHIPS BETWEEN DCs AND PERFORMANCE – THE EFFECTS OF MEDIATION

7.1 INTRODUCTION

When an independent variable affects a dependent variable indirectly through at least one mediator or intervening variable, mediation exists (Preacher and Hayes 2008). To establish the mediating role of an intervening variable in the relationship between an exogenous variable and an endogenous variable in the conceptual model (Figure 3.1, Chapter 3), a model that contains both direct and indirect effects between strategic leadership and performance is estimated. Mediation should be clearly implied and integrated in the focal conceptual model (Iacobucci, Saldanha, and Deng 2007). A variable acts as a mediator when significant variations in the presumed mediator is accounted for by variations in the exogenous variable, and variations in the endogenous variable are accounted for by variations in the mediator (Baron and Kenny 1986). When the possible mediation is considered theoretically, and empirically tested, the nature of the cause-effect relationship can then be accurately and completely understood (Hair et al. 2014). The mediator analysis aims to evaluate the extent to which the independent variable's effect on the dependent variable is direct or indirect through the mediator variable (Iacobucci, Saldanha, and Deng 2007; MacKinnon, Fairchild, and Fritz 2007).

Considering independent variables, mediator variables and dependent variables have their own additional antecedents or consequences and, therefore, are embedded in the larger nomological network (as shown in the conceptual model), a multiple mediation approach could be adopted, in line with Preacher and Hayes (2008) and Iacobucci, Saldanha, and Deng (2007). However, considering that the degree of the practical application of the complete model does vary from SMP to SMP¹²⁹, and that empirical analysis should have a strong theoretical basis (Hair et al. 2014; Iacobucci, Saldanha, and Deng 2007), a simple mediation approach was adopted, in line with Preacher and Hayes (2008), and Hoyle and Kenny (1999).

The remainder of this chapter is structured as follows: method of evaluation; evaluation of mediating effects of mediation variables (using simple) mediation models).

¹²⁹ Some SMPs may be in a position to implement only part of the model. Most of the SMPs in the study are micro and small firms, with limited resources for complete implementation of the aggregate model.

7.2 METHOD OF EVALUATION

To gain better understanding of mediating latent constructs in the research (conceptual model), and to evaluate the potential mediating effects of such variables, Preacher and Hayes's (2008) procedure which involves bootstrapping in a two-step procedure was adopted as follows: 1) determine the significance of the direct effects without the mediator(s); 2) determine the significance of indirect effects and associated t-values using the path coefficient when mediators are present. This two-step approach is in line with Hoyle and Kenny (1999). A positive direct effect in PLS path model without the mediator variable would become smaller after the inclusion of the mediator variable (Hair et al. 2014).

Preacher and Hayes's (2008) procedure was deemed suitable for this study, considering that bootstrapping can be applied, with greater confidence, to small sample sizes, and makes no assumptions about sampling distribution of statistics or the shape of the distribution of variables (Hair et al. 2014). However, with PLS-SEM, the two-step approach is not required as the same results could be obtained by using only the second step (Nitzl, Roldan, and Cepeda 2016).

The path coefficients of the relationships were estimated using the PLS algorithm procedure, the significance of the direct and indirect effects were evaluated by employing the bootstrap procedure in SmartPLS software (Ringle, Wende, and Becker 2015). The bootstrap settings were: 5000 subsamples, parallel processing, no sign changes, complete bootstrapping, Bias-Corrected and Accelerated (BCa) bootstrap, two-tailed, and 0.05 significance level. From the results of the bootstrap procedure, the specific indirect effects (mean, STDEV, t-values, and p-values) were calculated. Also, 95% confidence intervals and bias-corrected confidence intervals were constructed from the bootstrap results to determine the mediating effects. The use of bias-corrected bootstrap confidence interval is ideal for detecting effects when such effects are present (that is, Type-II error or power), while the use of percentile bootstrap confidence interval (not bias-corrected) is good to allay concerns about Type-I errors (Hayes and Scharkow 2013). In this regard, the indirect effect is significant if zero (0) is not included between the lower range and upper range of the 95% confidence interval estimates (Nitzl, Roldan, and Cepeda 2016).

In relation to the total effect, the size of the indirect effect is determined by the Variance Accounted For (VAF), a continuous index which indicates the extent to which the exogenous variable directly explains the variance of the endogenous variable, and how the indirect relationship, via the mediator, explains the dependent variable's variance (Hair et al. 2014, Iacobucci, Saldanha, and Deng 2007). In the context of SEM, statistical evidence of mediation requires evidence of causal direct influence of the independent variable on the dependent variable, and a significant indirect effect of the independent variable on the dependent variable (Hoyle and Kenny 1999). The results of such statistical analysis could indicate that there is no mediation, partial mediation, full mediation or a suppression effect. A VAF of less than 20% indicates no (or nearly zero) mediation (occurs when the indirect effect, although significant, does not absorb any of the independent variable's influence on the dependent variable), a VAF of between 20% and 80% indicates partial mediation, and a VAF of more than 80% demonstrates full mediation (Nitzl, Roldan, and Cepeda 2016; Hair et al. 2014).

7.3 Evaluation of mediating effects in each simple mediation model

In this section, each (simple) mediation model has been analysed to determine the extent of the mediation effect, if any, in the model.

7.3.1 - Ambidexterity as mediator between Strategic Leadership and Performance

H₁₀: The relationship between strategic leadership and firm performance is mediated by ambidexterity.

a) Path Coefficients of direct and indirect relationships

The estimates of the model for the direct strategic leadership → performance relationship without the mediator shows a path coefficient = 0.588; measurement model reliability, convergent validity, internal consistency, and discriminant validity satisfactory (Composite reliability is larger than 0.8; AVE larger than 0.5; Fornell-Larcker criterion validated; indicator cross loading is validated as each indicator's loading is greater than its cross loadings; HTMT Ratio is validated as values are < 0.85; $R^2 = 0.346$, R^2 (adj) = 0.344; $f^2 =$

0.528. With T-value = 15.998, the path coefficient for strategic leadership → performance relationship is statistically significant (p value = 0.000). See figure 7.1 and figure 7.2 below.

Fig 7.1: Path coefficient for the direct relationship: Strategic Leadership to Performance (without mediators)

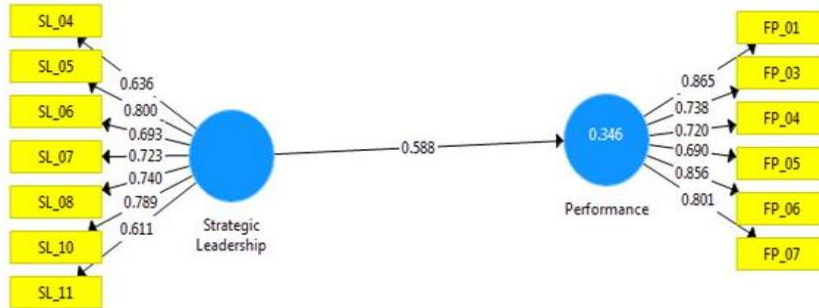


Figure 7.1: Path coefficient for Strategic Leadership to Performance relationship (without mediators)

Fig 7.2: T-value for direct path coefficient Strategic Leadership to Performance relationship without mediators

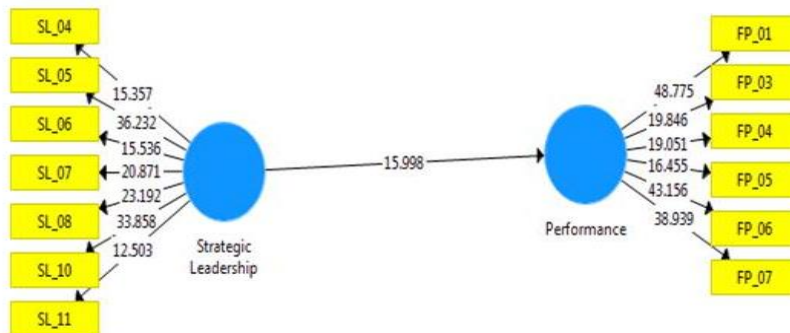


Figure 7.2: T-value of path coefficient for Strategic Leadership to Performance relationship (without mediators)

To establish the mediating role of ambidexterity in the strategic leadership → performance relationship shown in the conceptual model, a model that contains both direct and indirect effects between strategic leadership and performance is estimated. The parameter estimates show the following path coefficients and t-statistics: strategic leadership → performance = 0.244; strategic leadership → ambidexterity = 0.715; ambidexterity → performance = 0.467.

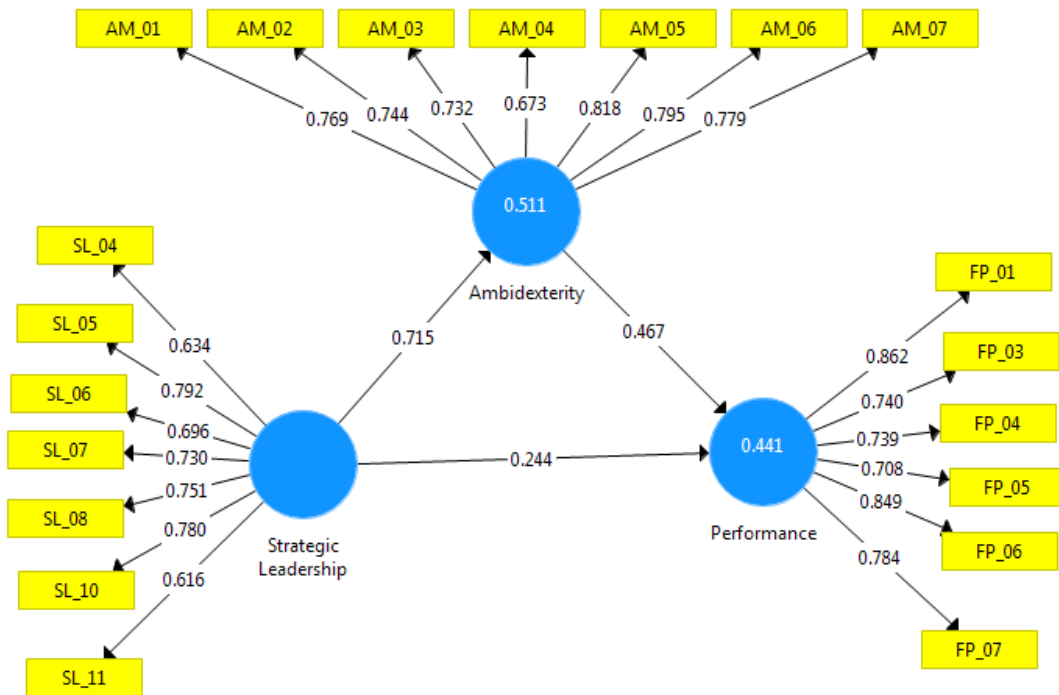


Figure 7.3: Path coefficients and indicator loadings for mediation model: Strategic Leadership → ambidexterity → firm performance.

The measurement model reliability, internal consistency (Composite reliability is larger than 0.8; AVE larger than 0.5), and discriminant validity (Fornell-Larcker criterion validated; indicator cross loadings validated; HTMT Ratio < 0.85) confirmed. R^2 for ambidexterity = 0.511, R^2 (adj) = 0.509; R^2 for performance = 0.441, R^2 (adj) = 0.437; f^2 for strategic leadership → ambidexterity = 1.045; f^2 for strategic leadership → performance = 0.052; f^2 for ambidexterity → performance = 0.191. The T-values were estimated as follows: strategic leadership → ambidexterity [t-value = 24.155; p-value = 0.000], strategic leadership → performance [t-value = 3.999, p-value = 0.000], ambidexterity → performance [t-value = 8.349; p-value = 0.000]. These results demonstrate that the path coefficients [direct and indirect] are statistically significant. The statistics are detailed in Table 7.1.

b) Statistical significance and magnitude of mediating effect of ambidexterity

The bootstrap estimates were used to calculate the standard deviation (standard error in PLS), in order to determine the significance of the specific indirect effects of ambidexterity as a potential mediating variable. Thus, with t-value = 7.742, at $\alpha = 0.001$ [p-value = 0.000], the

specific indirect effect of ambidexterity on the strategic leadership → performance relationship is statistically significant. The 95% confidence intervals (0.333, 0.335) and bias-corrected confidence intervals (0.333, 0.336) show that zero (0) is not included in the figure between the lower range and upper range. This indicates that the specific indirect effect is significant.

Using the direct and indirect path coefficients, the calculation shows the VAF = 57.78% (see Table 7.2). Thus it can be concluded that 57.78% of strategic leadership's effect on performance can be explained via the ambidexterity mediator. It can, therefore, be argued that ambidexterity has a partial mediation effect on the strategic leadership → performance linkage (relationship). With these findings, the null hypothesis is rejected, and the hypothesis, H_{10} , is supported. See Figure 7.3 above. Also see Tables 7.1, 7.2, 7.3, & 7.4 (Appendix E) for the statistics.

7.3.2 – Organisational learning as mediator in the Strategic Leadership → Firm Performance relationship

H_4 : *The relationship between strategic leadership and firm performance is mediated by organisational learning.*

a) Path Coefficients of direct and indirect relationships

The model parameter estimates for the direct strategic leadership → performance relationship without the potential mediator are same as shown in Fig. 7.1 & Fig. 7.2, and they have not been replicated here.

After including the mediating variable, learning, into the model, the path coefficients for the direct and indirect relationships were as follows: strategic leadership → performance = 0.375; strategic leadership → learning = 0.674; learning → performance = 0.305. See figure 7.4 below

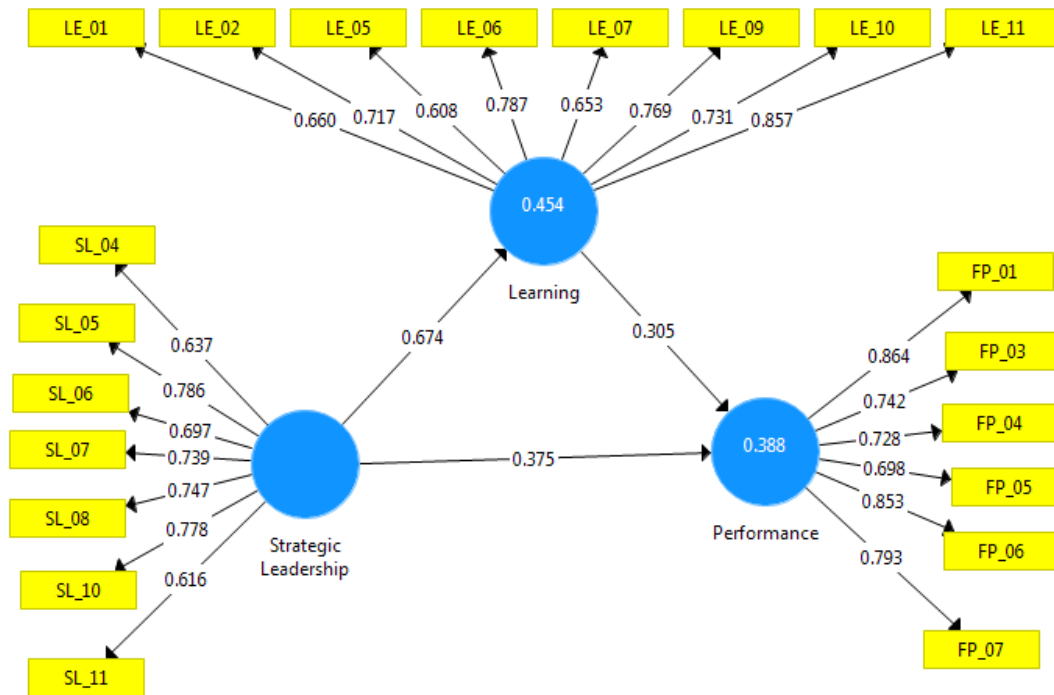


Figure 7.4: Path coefficients and indicator cross loadings for mediation model: Strategic Leadership → learning → firm performance.

The measurement model reliability and internal consistency values are satisfactory (Composite reliability is larger than 0.8 [learning = 0.898, performance = 0.904, Strategic leadership = 0.880]; AVE larger than 0.5 [learning = 0.528, performance = 0.612, strategic leadership = 0.514]). The values for discriminant validity meet the required threshold (Fornell-Larcker criterion validated; indicator cross loadings validated; HTMT Ratio < 0.85 [learning → performance = 0.620, strategic leadership → learning = 0.787, strategic leadership → performance = 0.648]). These results indicate a good model fit. R^2 for learning = 0.454, R^2 (adj) = 0.452; R^2 for performance = 0.388, R^2 (adj) = 0.384; f^2 for strategic leadership → learning = 0.831; f^2 for strategic leadership → performance = 0.125; f^2 for learning → performance = 0.083. The t-values estimates were as follows: strategic leadership → learning [t-value = 21.486; p-value = 0.000], strategic leadership → performance [t-value = 6.156, p-value = 0.000], learning → performance [t-value = 5.206; p-value = 0.000]. These results illustrate that these path coefficients: strategic leadership → organisational learning, strategic leadership → performance, organisational learning → performance are statistically significant. The detailed statistics are presented in Table 7.1 (see Appendix E).

b) Statistical significance and magnitude of mediating effect of learning

The standard deviation (standard error in PLS), calculated from the bootstrap estimates, were used to evaluate the significance of the specific indirect effects of learning as a potential mediating variable in the strategic leadership → firm performance relationship.

At $\alpha = 0.01$ [p-value = 0.007], and t-value = 2.699 the specific indirect effect of learning on the strategic leadership → performance relationship is statistically significant. The 95% confidence intervals (0.204, 0.208) and bias-corrected confidence intervals (0.205, 0.209) show that zero (0) is not included in the figure between the lower range and upper range. This shows that the specific indirect effect is significant.

Using the direct and indirect path coefficients to determine the magnitude of mediation, the calculation shows VAF = 35.41%. Thus the mediating variable, learning, explains 35.41% of strategic leadership's effect on performance. This indicates a partial mediation effect of learning on the strategic leadership → performance relationship. These results support the hypothesis, H_4 , and reject the null hypothesis. See Figure 7.4 and Tables 7.1, 7.2, 7.3, & 7.4 (in Appendix E) for the statistics.

7.3.3 - Innovativeness (Innovate) as mediator in the Strategic Leadership → Performance Relationship

H_{14} : *The relationship between strategic leadership and firm performance is mediated by innovativeness.*

a) Path Coefficients of direct and indirect relationships

The parameter estimates for the direct strategic leadership → performance relationship without the potential mediator are same as shown in Figures 7.1 & 7.2. Therefore, the results have not been reproduced here.

With the inclusion of the mediator - innovativeness, into the model, the following path coefficients were obtained: strategic leadership → performance = 0.251; strategic leadership → innovativeness = 0.704; and innovativeness → performance = 0.473. See figure 7.5 below.

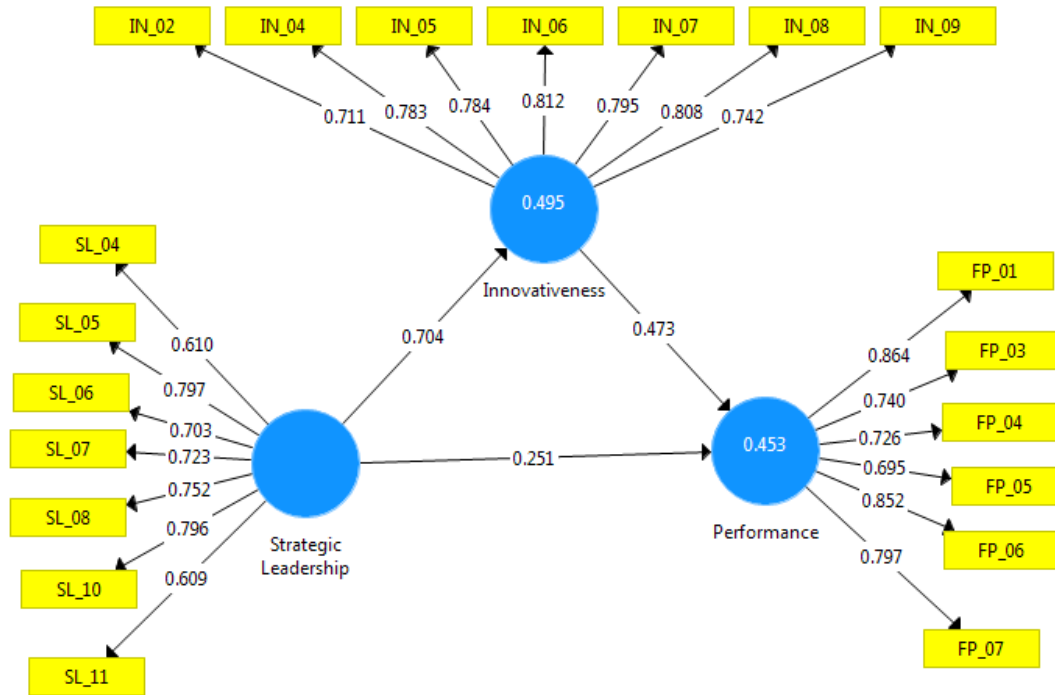


Figure 7. 5: Path coefficients and indicator cross loadings for mediation model: Strategic Leadership → innovativeness → firm performance.

The measurement model reliability and internal consistency values are satisfactory (Composite reliability is larger than 0.8 [innovativeness = 0.914, performance = 0.903, Strategic leadership = 0.880]; AVE larger than 0.5 [innovativeness = 0.604, performance = 0.611, strategic leadership = 0.514]). The values for discriminant validity are in line with the required threshold (Fornell-Larcker (1981) criterion validated; indicator cross loadings validated; HTMT Ratio < 0.85 [innovativeness → performance = 0.704, strategic leadership → innovativeness = 0.793, strategic leadership → performance = 0.648]). These results indicate a good model fit. R^2 for innovativeness = 0.495, R^2 (adj) = 0.494; R^2 for performance = 0.453, R^2 (adj) = 0.450; f^2 for strategic leadership → innovativeness = 0.981; f^2 for strategic leadership → performance = 0.058; f^2 for innovativeness → performance = 0.206.

The following t-values estimates were obtained: strategic leadership → innovativeness [t-value = 25.503; p-value = 0.000], strategic leadership → performance [t-value = 4.142, p-value = 0.000], innovativeness → performance [t-value = 8.487; p-value = 0.000]. These results demonstrate that these path coefficients: strategic leadership → innovativeness,

strategic leadership → performance, innovativeness → performance are statistically significant. The statistics are detailed in Table 7.1 (Appendix E).

b) Statistical significance and magnitude of mediating effect of innovativeness

The standard deviation (standard error in PLS), calculated from the bootstrap estimates, were used to evaluate the significance of the specific indirect effects of innovativeness as a potential mediating variable in the strategic leadership → performance linkage.

At $\alpha = 0.001$ [p-value = 0.000], and t-value = 7.992 the specific indirect effect of innovativeness on the strategic leadership → performance relationship is statistically significant. The 95% confidence intervals (0.331, 0.334) and bias-corrected confidence intervals (0.332, 0.334) show that zero (0) is not included in the figure between the lower range and upper range. This shows that the specific indirect effect is significant.

Using the direct and indirect path coefficients to determine the magnitude of mediation, the calculation shows VAF = 57.02%. Thus the mediating variable, innovativeness, explains 57.02% of strategic leadership's effect on performance. This indicates a partial mediation effect of innovativeness on the strategic leadership → performance relationship. These results support the hypothesis, H_{14} , and reject the null hypothesis. See Figure 7.5 and Tables 7.1, 7.2, 7.3, & 7.4 (in Appendix E) for the statistics.

7.3.4 - Ambidexterity as mediator in the relationship between organisational learning and firm performance

H_{11} : *The relationship between organisational learning and firm performance is mediated by ambidexterity.*

a) Path Coefficients of direct and indirect relationships

The estimates of the model for the direct learning → performance relationship without the mediator shows a path coefficient = 0.557; measurement model reliability, internal consistency, and discriminant validity confirmed / assured (Composite reliability is larger than 0.8; AVE larger than 0.5; Fornell-Larcker criterion validated; indicator cross loadings

validated; HTMT Ratio < 0.85); $R^2 = 0.310$, R^2 (adj) = 0.308; $f^2 = 0.450$. With T-value = 15.674, the path coefficient for learning → performance relationship is statistically significant (p-value = 0.000).

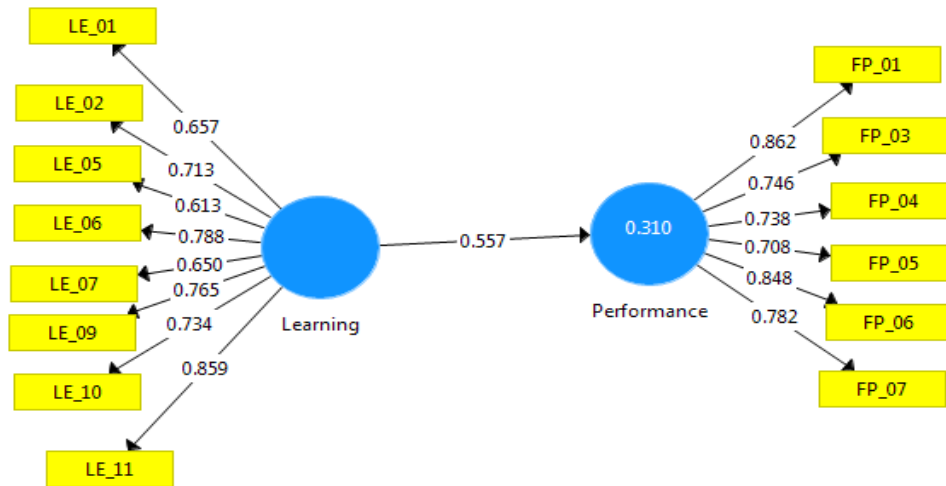


Figure 7.6: Path coefficient for the influence of organisational learning on performance (without mediators)

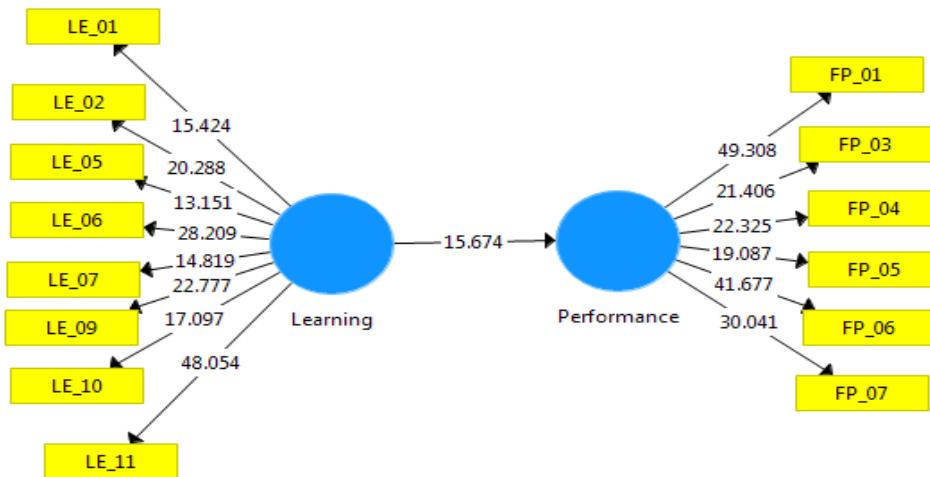


Figure 7.7: T-value of path coefficient for the direct relationship between organisational learning and performance (without mediators).

To establish the mediating role of ambidexterity in the learning → performance relationship in the conceptual model, a model that contains both direct and indirect effects between learning and performance is estimated. The model estimates show the following path coefficients: organisational learning → performance = 0.189; learning → ambidexterity = 0.726; ambidexterity → performance = 0.504. See Figure 7.8 below.

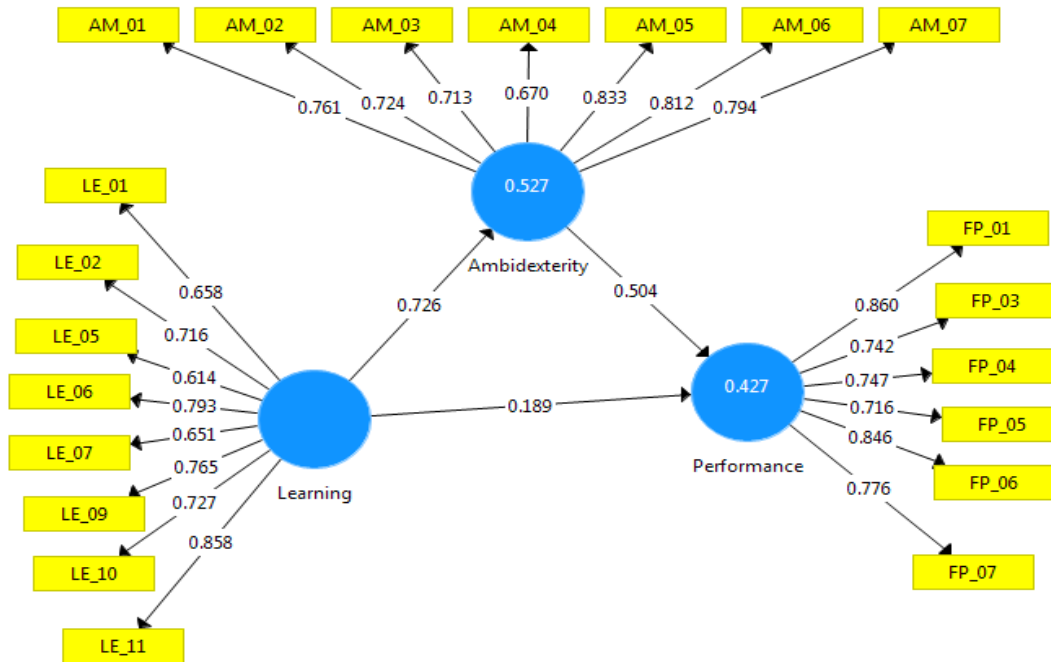


Figure 7.8: Path coefficients and indicator cross loadings for mediation model: organisational learning → ambidexterity → performance.

The measurement model reliability, internal consistency (Composite reliability is larger than 0.8 [ambidexterity = 0.905, learning = 0.898, performance = 0.904]; AVE larger than 0.5 [ambidexterity = 0.578, learning = 0.528, performance = 0.613]), and discriminant validity (Fornell-Larcker criterion validated; indicator cross loadings validated; HTMT Ratio < 0.85 [learning → ambidexterity = 0.819, learning → performance = 0.620, ambidexterity → performance = 0.714]) are satisfactory.

$R^2 = 0.527$ and R^2 (adj) = 0.525 for ambidexterity; $R^2 = 0.427$ and R^2 (adj) = 0.423 for performance. F^2 for learning → ambidexterity = 1.113; f^2 for learning → performance = 0.029; f^2 for ambidexterity → performance = 0.209. The t-values are estimated as follows: learning → ambidexterity [t-value = 26.159; p-value = 0.000], learning → performance [t-value = 3.076, p-value = 0.002], ambidexterity → performance [t-value = 8.552; p-value = 0.000]. These results demonstrate that these path coefficients [direct and indirect] are statistically significant. The statistics are detailed in Table 7.1 (see Appendix E).

b) Statistical significance and magnitude of mediating effect of ambidexterity

The bootstrap estimates were used to calculate the standard deviation (standard error in PLS), in order to determine the significance of the specific indirect effects of ambidexterity as a potential mediating variable. Thus, with a t-value = 7.904, at $\alpha = 0.001$ [p-value = 0.000], the specific indirect effect of ambidexterity on the learning → performance relationship is statistically significant. The 95% confidence intervals (0.364, 0.367) and bias-corrected confidence intervals (0.365, 0.368) show that zero (0) is not included in the figure between the lower range and upper range. This shows that the specific indirect effect is significant.

Using the direct and indirect path coefficients, the calculation shows the VAF = 65.94%. Thus it can be said that 65.94% of learning's effect on performance can be explained via the ambidexterity mediator. It can be argued that ambidexterity has a partial mediation effect on the learning → performance relationship. With these findings, the null hypothesis is rejected, and the hypothesis, H_{11} , is supported. See Figure 7.8 above. Also see Tables 7.1, 7.2, 7.3, & 7.4 (in Appendix E) for the statistics.

7.3.5 - Innovativeness as mediator in the relationship between ambidexterity and firm performance

H₁₅: The direct relationship between ambidexterity and firm performance is mediated by innovativeness.

a) Path Coefficients of direct and indirect relationships

The estimates of the model for the direct ambidexterity → performance relationship without the mediator shows a path coefficient = 0.641; measurement model reliability, internal consistency, and discriminant validity confirmed / assured (Composite reliability is larger than 0.8; AVE larger than 0.5; Fornell-Larcker criterion validated; indicator cross loadings validated; HTMT Ratio = 0.714); $R^2 = 0.411$, R^2 (adj) = 0.409; $f^2 = 0.697$. With t-value = 19.730, the path coefficient for ambidexterity → performance relationship is statistically significant (p-value = 0.000).

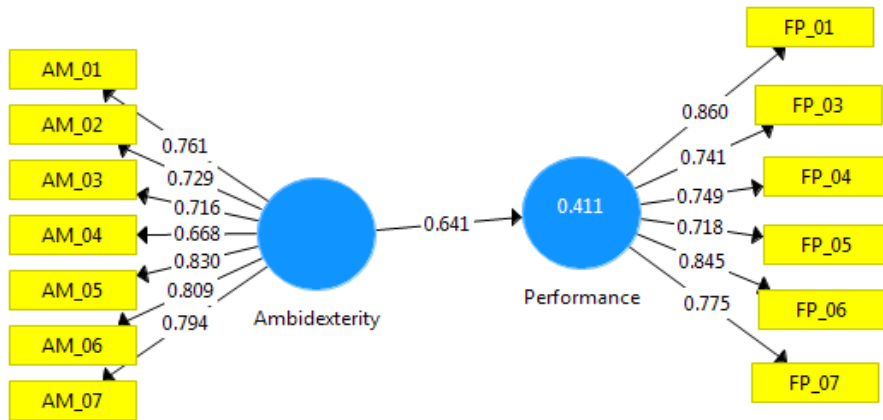


Figure 7.9: Path coefficient for the direct influence of ambidexterity on performance (without mediators)

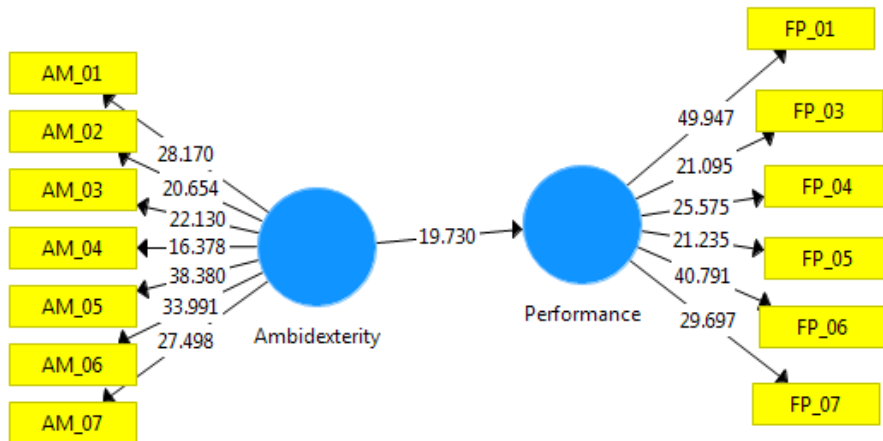


Figure 7.10: T-value of path coefficient for the direct relationship between ambidexterity and performance (without mediators).

To establish the mediating role of innovativeness in the ambidexterity → performance relationship in the conceptual model, a model that contains both direct and indirect effects between ambidexterity and performance is estimated. The model parameter estimates show the following path coefficients: ambidexterity → performance = 0.366; ambidexterity → innovativeness = 0.718; innovativeness → performance = 0.382. See figure 7.11 below.

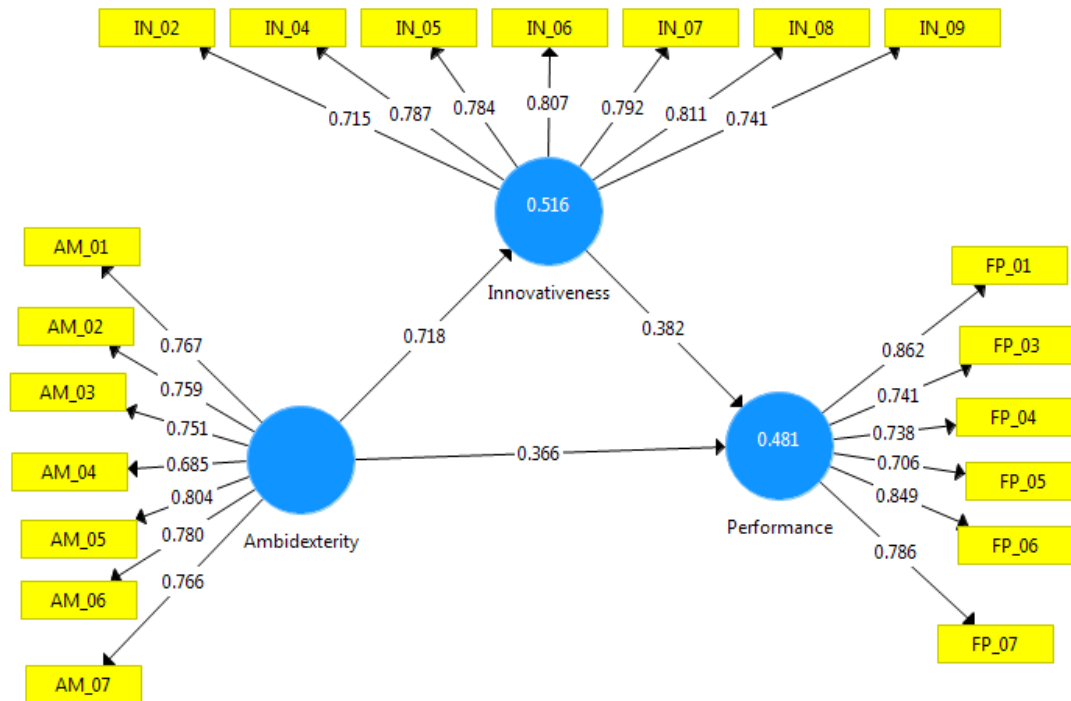


Figure 7.11: Path coefficients and indicator cross loadings for mediation model: Ambidexterity → innovativeness → firm performance.

The measurement model reliability, convergent validity, internal consistency (Composite reliability is larger than 0.8 [ambidexterity = 0.905, performance = 0.904, innovativeness = 0.914]; AVE larger than 0.5 [ambidexterity = 0.577, performance = 0.612, innovativeness = 0.604]), and discriminant validity (Fornell-Larcker criterion validated; indicator cross loadings validated; HTMT Ratio < 0.85 [ambidexterity → innovativeness = 0.798, innovativeness → performance = 0.704, ambidexterity → performance = 0.714]) satisfied.

R^2 for performance = 0.481, R^2 (adj) = 0.478; R^2 for innovativeness = 0.516, R^2 (adj) = 0.514. F^2 for ambidexterity → innovativeness = 1.065; f^2 for innovativeness → performance = 0.136; f^2 for ambidexterity → performance = 0.125. The t-values were estimated as follows: ambidexterity → innovativeness [t-value = 23.560; p-value = 0.000], innovativeness → performance [t-value = 6.664, p-value = 0.000], ambidexterity → performance [t-value = 6.222; p-value = 0.000]. These parameter estimates illustrate the statistical significance of direct and indirect path coefficients. The complete statistics are shown in Table 7.1 (see Appendix E).

b) Statistical significance and magnitude of mediating effect of ambidexterity

The bootstrap estimates were used to calculate the standard deviation (standard error in PLS), in order to determine the significance of the specific indirect effects of ambidexterity as a potential mediating variable. Thus, with a t-value = 6.253, at $\alpha = 0.001$ [p-value = 0.000], the specific indirect effect of innovativeness on the ambidexterity → performance relationship is statistically significant. The 95% confidence intervals (0.273, 0.276) and bias-corrected confidence intervals (0.276, 0.278) show that zero (0) is not included in the figure between the lower range and upper range. This shows that the specific indirect effect is significant.

Using the direct and indirect path coefficients, the calculation shows the VAF = 42.84%. Thus it can be said that 42.84% of ambidexterity's effect on performance can be explained via the innovativeness mediator. It can be argued that innovativeness has a partial mediation effect on the ambidexterity → performance relationship. With these findings, the null hypothesis is rejected, and the hypothesis, H_{15} , is supported. See Figure 7.11 above. Also see Tables 7.1, 7.2, 7.3, & 7.4 (in Appendix E) for the statistics.

The summary statistics relating to the testing of the hypotheses (mediation) are presented in Tables 7.1, 7.2, 7.3, & 7.4 (see **Appendix E**)

Table 7.1: Specific Indirect Effects – Mean, STDEV, T-Values, P-Values

[INSERT TABLE 7.1 ABOUT HERE]

Table 7.2: Confidence Intervals (Studentized)

[INSERT TABLE 7.2 ABOUT HERE]

Table 7.3: Confidence Intervals Bias-Corrected (Studentized)

[INSERT TABLE 7.3 ABOUT HERE]

Table 7.4: Evaluation of Extent of Mediation

[INSERT TABLE 7.4 ABOUT HERE]

7.4 CHAPTER SUMMARY

The effects of mediating variables on the relationship between DCs constructs and performance have been discussed. A simple mediation approach was employed in analysing the effects of mediation. The empirical results show that ambidexterity has a partial mediation effect on the relationship between strategic leadership and performance, and also on the relationship between organisational learning and performance.

Also, organisational learning has a partial mediation effect on the relationship between strategic leadership and performance. Finally, innovativeness has a partial mediation effect on the relationship between strategic leadership and performance, and a partial mediating effect on the relationship between ambidexterity and performance.

CHAPTER 8: KEY FINDINGS, CONTRIBUTIONS, FUTURE RESEARCH AND CONCLUSION

8.1 INTRODUCTION

Having interpreted and discussed, in chapters 5, 6 & 7, the empirical results of the analysis of the quantitative and qualitative data, this chapter presents a summary of the key findings of the research. The findings are presented in line with the various DCs constructs identified in the research model as relevant to enabling the SMP achieve sustainable improvement in performance. The findings from the qualitative analysis were used to expound on the findings of the quantitative analysis – the quantitative data being the major primary data, and supported by qualitative primary data. By so doing, the complementarity of the two methods is demonstrated.

Also, from the consolidated findings of the research, two post-analysis models are developed – growth-oriented and non-growth oriented models - based on the growth orientation of SMPs as professional services firms. If employed, the growth-oriented model would enable the firm to enhance its performance in the short-, medium- and long-term, that is, sustainable performance improvement. Similarly, the non-growth oriented model, if implemented, would lead to improvement in the firm's performance although such improvement may not be sustainable.

Additionally, the key contributions of the study, its limitations, suggestions for future research, and conclusion are presented. The chapter is structured as follows: findings relating to DCs constructs; effects of control variables; post-analysis models; contributions, limitations of the study; suggestions for future research and; conclusion.

8.2 FINDINGS RELATING TO DYNAMIC CAPABILITIES & PERFORMANCE

8.2.1 Strategic Leadership

This study identified the DCs of strategic leadership (orientation), organisational learning, alliances & networks, ambidexterity, and innovativeness as key to enabling the SMP's adaptation to its environment, and achieving long-term improvement in performance.

Strategic leadership significantly and positively influences organisational learning within the SMP. The strategic direction and strategic intent of the firm, defined by its strategic leadership, determine the choice of short-term and long-term direction of the SMP. This involves senior management's decision regarding the quality and range of service offerings, the firm's location and catchment area, types of clients, size of the firm, the quality of employees and expected performance.

By setting its strategic intent and direction, management determines the establishment of the routines for the type and extent of individual and organisational learning to be pursued, and the need for alliances & networks. The strategic intent and direction also allow management to determine whether the firm exploits its current know-how while exploring new knowledge, as well as the need to be innovative by diversifying its service offerings. Equally important, they allow management to determine whether innovativeness would be as a result of the SMP directly offering new services (direct innovativeness) leading from its exploration of new knowledge or indirectly offering new services sourced from network partners (indirect innovativeness). The prompt and adequate configuration and reconfiguration of these DCs by management positively and significantly impact on the SMP's competitive advantage and performance.

Although the direct influence of strategic leadership on SMP performance is statistically non-significant, its total impact (i.e. direct and indirect effects) on performance is significantly high, considering it directly influences all the other identified DCs (see Fig 5.3, Fig 7.1, and Fig 7.2), with each, in turn, directly influencing SMP performance (see Tables 5.19 (page 152) & 6.1 (page 182) and Table 5.20 (Appendix D)). This is because the tone at the top of the firm (i.e. strategic leadership) lays the foundation and sets the stage for the investment in development and deployment of the network of relevant DCs. This implies that a top-down approach, driven by the strategic leadership of the firm, is required to build a nomological network of DCs relevant to the circumstances of the SMP as a professional services firm.

Based on the results of the qualitative study, the emphasis on strategic leadership in the development and deployment of relevant DCs in the nomological network is due to the fact that the aspirations or strategic intent may be different between two SMPs of similar size, operating in the same locality and serving clients of similar size or same industry. For example, while some SMPs are growth-oriented, others are non-growth seeking. Because the firm incurs cost in developing and configuring its DCs, the growth-seeking SMP would be

able to justify such investments while the non-growth seeking firm may find adequate justifications difficult to come by. Therefore, because of its willingness to develop, configure and orchestrate its DCs, the growth-oriented SMP will be more proactive and adaptable to environmental turbulence than the non-growth oriented SMP.

8.2.2 Organisational Learning

Empirical evidence from the study demonstrates that organisational learning significantly and positively influences the SMP's ability to exploit its current know-how (expertise), as well as its ability to explore new knowledge (i.e. its ambidexterity). Furthermore, the SMP's performance is also positively and significantly impacted by the degree of learning invested by the firm.

SMPs underscore the importance of organisational learning which they consider an investment. Therefore, firms invest in the training and education of staff - training which is sought from both internal and external sources. External sources of training are specific (such as provided by 2020 Innovation), and include knowledge sharing amongst employees. In addition to the education and training of staff, management creates an environment within the firm that is conducive for the development, management, and articulation of knowledge and nurturing of skills.

The knowledge acquired from learning is made up of knowledge that updates and enhances the existing expertise of the SMP, and knowledge that is new to the firm. Thus organisational learning lays the foundation from which the firm could exploit its existing knowledge and know-how, or exploit its existing know-how while exploring the new knowledge. Again, the decision whether to exploit existing knowledge and/or to also explore new knowledge, that is, whether the SMP should pursue an ambidextrous orientation, is based on the strategic leadership of the firm. When adequate training is given to employees, their efficiency in service delivery is increased, with consequent increase in client satisfaction, client retention, and improvement in the firm's performance.

8.2.3 Alliances & Networks

This study finds that the existence of alliances & networks significantly and positively impacts on organisational learning as well as on its ambidexterity. Also, the results illustrate that the existence of alliances & networks positively impacts on the SMP's innovativeness although such impact is non-significant.

The above is explained by the fact that in certain alliances & networks, periodic webinars are released for technical updates and other non-technical information. Conferences and seminars are also organised during which network members learn and share knowledge relating to their industry (practising accountants), the wider economy, and issues specifically facing SMPs in the network. Therefore, alliances & networks are usually a treasured source of knowledge from which member firms learn. The knowledge provided by SMP networks & alliances include knowledge relating to services it provides, and information that may be new to a member firm. While the SMP exploits the knowledge relating to its current know-how, it could also explore the new knowledge obtained from the network. However, such exploration of new knowledge, and the need to strike the right balance with the exploitation of its current expertise, will be influenced by the strategic direction the firm pursues.

Because there is a broad-spectrum of services provided by accountancy firms, it is difficult for a firm, especially the SMP, to be able to provide all the services¹³⁰ that businesses may demand. Therefore, considering a lot of SMPs do focus on providing specific services, the combined range of services offered by all the network members could be broad. As such alliances present the member SMP the opportunity to be innovative by extending its range of service offerings by sourcing the additional services from alliance & network partners. Thus alliances & networks are instrumental to firms, especially SMPs (as SMEs), as they are not capable of providing such services in-house due primarily to resource constraint.

8.2.4 Ambidexterity

An SMP's ambidexterity has a positive and significant influence on both its innovativeness and performance. Because of the need to strike a balance between exploitation of existing know-how (or expertise) and exploration of new knowledge, growth-oriented rather than non-

¹³⁰ For example: preparation of annual accounts, tax returns, FOREX, financial planning, HR, etc.

growth oriented firms engage in ambidexterity. By adopting an ambidextrous orientation, the firm exploits knowledge of its existing service offerings, in order to become more efficient and to improve the quality of service delivery. Such knowledge could be obtained from customer feedback, from training given to staff or from conferences or seminars organised by the networks. With improvement in efficiency in, and quality of, service delivery, output will be increased, and client satisfaction and retention increased. In addition, new clients gained through referrals from existing clients will increase as satisfied clients increasingly recommend their accountants to other businesses. The combined effect of these will be an increase in the volume of services provided by the SMP, and a consequent increase in its earnings.

Also, the ambidextrous orientation enables the SMP to explore new knowledge. The SMP acquires new knowledge from its networks, from its meetings with clients and from external search. Such new knowledge (information) could relate to issues facing SMEs for which solutions must be sought; and/or it could relate to services that are already being provided by other practising accountants. Or it could be that the SMP explores the idea of packaging or repackaging of services into bundles from which clients and prospective clients could choose. Either way, the growth-oriented SMP explores (or further investigates) such new knowledge, to ensure that it develops the capability that enables it to be innovative by introducing new service offerings.

8.2.5 Innovativeness

Innovativeness by the SMP positively and significantly influences its performance. By its innovativeness, the SMP introduces new services thereby diversifying its service offerings; and/or it introduces new and more efficient ways of delivering its services to clients.

The SMP diversifies its portfolio of service offerings either directly by acquiring the necessary skills and expertise in-house for such new services, and/or indirectly by acquiring expertise for the new services from network partners. Also, the diversification by the indirect route – acquiring services from network partners – could take one of two routes: (i) the network partner delivers the service through the SMP, in which case the firm serves as a one-stop-shop; (ii) the SMP refers the client to the network partner who then delivers the service directly to the client. In certain instances, the SMP may adopt both the direct and indirect

routes to service diversification, that is, clients are referred to the network partner for certain services, while other services are offered by network partners through the SMP.

With the diversification of service offerings through the direct route, more and varied services are offered by the SMP, with the additional fee income arising therefrom directly contributing to improvement in the financial performance of the firm. Furthermore, diversification of SMP's portfolio of service offerings resulting from both the direct and indirect routes will lead to client satisfaction, especially due to the fact that their accountant is able to provide the services that they need or may need. Satisfied clients do maintain their accountants, thereby increasing the client retention rate, and are willing to recommend their accountants to other businesses. This improvement in non-financial performance metrics will give the firm an edge over its competitors, resulting in long-term improvement in financial and non-financial performance.

In another vein, the SMP could introduce innovative or new ways of delivering its services to clients, which is usually the case of using technology and software to drive service delivery. For instance, the use of cloud accounting software to deliver compliance services such as annual accounts and tax returns, or the use of audit software in performing the audit of financial statements. Therefore, by investigating new relevant technologies and/or keeping abreast of such advances (by the ambidextrous SMP), new technologies could be identified, the investment made to acquire it, and adequate training given to staff for its effective use. The use of such technologies will improve efficiency, drive down long-term operating cost, and increase the firm's margins. With increased efficiency, the agility of service delivery is ensured, making it possible for an increased volume of work to be delivered. The increase in staff efficiency will also allow management the time to focus on improving quality, thereby increasing client satisfaction, client retention, and client referrals. Again, the overall effect of this is that the SMP is enabled to be competitively positioned, and to continually achieve improved performance.

8.3 FINDINGS RELATING TO THE EFFECTS OF CONTROL VARIABLES

The three control variables employed in the study are firm size, firm age and competitive intensity. The impact of SMP size on its ability to grow and/or expand varies between growth-oriented and non-growth oriented SMPs. This is because SMPs that are at a stage of the

business cycle in which the directors are content with the firm's size or feel that additional growth may distort the business model, the size of the firm is not considered a constraint to the firm at that point. On the other hand, SMPs that seek growth and expansion would require funds to acquire additional human and physical resources (qualified employees, provide continuous training, IT equipment, software, office infrastructure) necessary to support such growth ambitions. However, because of its size, the firm may not have the necessary guarantees (features) that would render it attractive to lenders. Therefore, in this regard, the size of the firm is a constraint to achieving the objectives of the growth-oriented SMP.

Similarly, the intensity of competition in the market (i.e. market turbulence) is perceived differently by growth-seeking and non-growth seeking firms. For instance, some non-growth seeking firms do not accept new clients because they have attained full capacity and are not ready to expand, thus focusing their efforts to maintain their current clientele. On the other hand, growth-oriented SMPs may perceive that competition is intense as they seek to win new clients in the current market or go into new markets or expand and diversify their range of service offerings. The perception of the intensity of competition (market turbulence) influences management's decision to configure or reconfigure the SMP's DCs. This implies that even where both the non-growth seeking and growth-seeking SMPs have the established routines that could be reconfigured (i.e. DCs that could be deployed) to enable the firm adapt to such market turbulence, it is likely that while the growth-seeking SMPs will deploy the DCs in this circumstance, the non-growth seeking SMP will not, since the intensity of competition is perceived differently by both firms.

From the qualitative results, the study finds that as the SMP ages, the quality of clients it attracts and retains is improved. This implies that as the firm grows older, it is able to attract and retain the quality of clients that are in line with its strategic plan. This is because: (i) the SMP has grown in confidence from the years of providing services to SMEs, and can, thus, be selective in accepting new clients; (ii) it has attained a size at which it is not just interested in adding the numbers (that is, it has attained a size threshold at which the quality of new clients is more important than just taking on another client); (iii) its experience in providing services to clients has given it the track record which could be used as a point of reference by itself and by prospective clients; (v) the ageing of the firm provides its directors with greater understanding of the accountancy practice industry and the SME market – knowledge that is important in developing and delivering services that attract new clients and meet the expectation of existing clients.

Furthermore, because of the firm's increased experience, its track record and understanding of its industry and that of the SMEs, the directors are able to be more targeted at engaging in alliances and networks. This is to ensure that network partners provide the necessary knowledge, skills and/or services, to enable it meet its objectives in organisational learning and/or in the range of service provision, in order to enhance its client experience and improve its performance.

Every year, the UK government introduces a number of legislations, relating to taxation, which affect businesses. Because small businesses do not have in-house accountants, they rely on their external accountants for compliance with such legislations. Although there is usually a lead time for the implementation of some of the changes, others require retrospective implementation. The lead time gives accountancy firms a period in which to prepare and be ready to assist SME clients in complying with the legislation. The preparation includes a comprehensive understanding of the requirements of the specific legislation and the acquisition of the relevant tools (e.g. software) necessary for its implementation. Interestingly, the adequacy of such a lead time is perceived differently by various SMPs, and the variation in the perception of the adequacy of the lead time would result in variation in the deployment of DCs by SMPs, and a consequent variation in adaptability and performance of these firms.

Whatever the stage of development the SMP is at, whatever its size or growth-orientation, its strategic leadership is the primary most important DCs construct, based on the relative importance of this dynamic capability in the nomological network of the firm's DCs. This implies that whether the SMP is at its infancy (embryonic stage) or is well developed and aged, strategic leadership is important in making the call that spells out its strategic intent and shapes the strategic direction of the firm, with the obvious consequences on the investment in, and deployment of, its DCs – DCs that will have a resultant effect on the firm's sustainable improvement in performance.

While the effect of the network of DCs account for 50.1% of the variance explained (R^2) in younger firms, they account for 46.3% of the R^2 in older SMPs. The empirical results thus demonstrate that DCs have overall greater impact on performance in younger firms than older firms. This finding is consistent with the argument that DCs will result in increased learning with greater impact on future performance in younger firms as changes in operational capabilities are infrequent in such firms (Zollo and Winter 2002).

8.4 MODEL FOR RESILIENCE & PERFORMANCE IMPROVEMENT

Having developed the research model based on the literature, quantitative and qualitative empirical data were collected, analysed, and the results interpreted and discussed. An aggregation of the findings from both the quantitative and qualitative analyses has been presented, showing how the two methods (approaches) are complementary. Based on the findings of this study, it is important to produce a post-analysis model with a nomological network of DCs. Considering the findings from the qualitative arm of the study illustrate that SMPs could be split by their growth orientation – growth-oriented and non-growth oriented - the discussion will follow this distinction in growth orientation of SMPs as professional services firms, in order to facilitate comprehension of this brief post-analysis discussion and ensure proper implementation of the models developed in this section.

Growth-oriented SMPs are those that seek both an increase in the capacity of the business, and improvement in performance. The capacity of the SMP includes the size of its client base, the quality of clients, the range of services provided by the firm, and geographical spread of clients. The performance of these SMPs are considered in terms of turnover (gross fee income), costs, profitability, customer satisfaction and retention, growth in new clients gained through referrals, and growth in clientele not achieved through referrals.

The drive to increase the capacity of the firm and improve its financial and non-financial performance pose more challenges to the growth-oriented firm than to the non-growth oriented SMP. The sources of these challenges are both internal and external: while the external challenges include environmental dynamism (market turbulence, technological turbulence, regulatory/legislative turbulence), and the size and age of the firm, the internal challenges include staffing, planning, networking etc. These challenges require the SMP to have the capabilities to scan its internal and external environments, and to be able to reinvent itself and adapt to changes through the deployment of its DCs.

The growth-oriented and non-growth oriented firms operate in the same business environment. Growth-orientation and non-growth orientation are not permanent states for SMPs, and are based on their strategic leadership. This implies that the strategic leadership (orientation) of the SMP could change and, again, be reversed at another time; that is, the decision could be made by the senior management of a growth-oriented SMP that growth

would no longer be pursued because of a recent merger with, or acquisition of, another SMP. In this case, the reason could be that the acquiring SMP need time to consolidate its acquisition. On the other hand, management of a non-growth oriented firm may decide to start embarking on the pursuit of growth. This could be because the firm has acquired the necessary resources such as more qualified staff and the relevant technology, to enable it to properly manage an increased capacity.

Changes in the business environment will pose threats to the SMP; for instance, increased competition from other SMPs, economic decline in a specific industry, or macro-economic downturn. On the other hand, the environmental changes could present new business opportunities for growth – opportunities that need to be seized upon by the SMP. However, if the SMP is not agile and proactive in dealing with such threats and opportunities, there is the risk of dire consequences for the firm since its current competitors and new entrants may be prompt and more effective in their adaptation to the environmental changes. For the SMP to be proactive and agile in tackling the threats posed and in seizing the opportunities presented by the environment, it needs the relevant competencies, that is, the DCs that function and network together, to give it a competitive edge in the market and enable it to achieve improved performance in the long-term.

8.4.1 Growth-Oriented firm (SMPs) – The Model

Growth-oriented firms need to develop DCs that could be configured and reconfigured to enable its adaptation in all areas including innovativeness leading to the provision of diversified services, and entry into new markets and industries.

Fig 8.1: Growth-Oriented Model

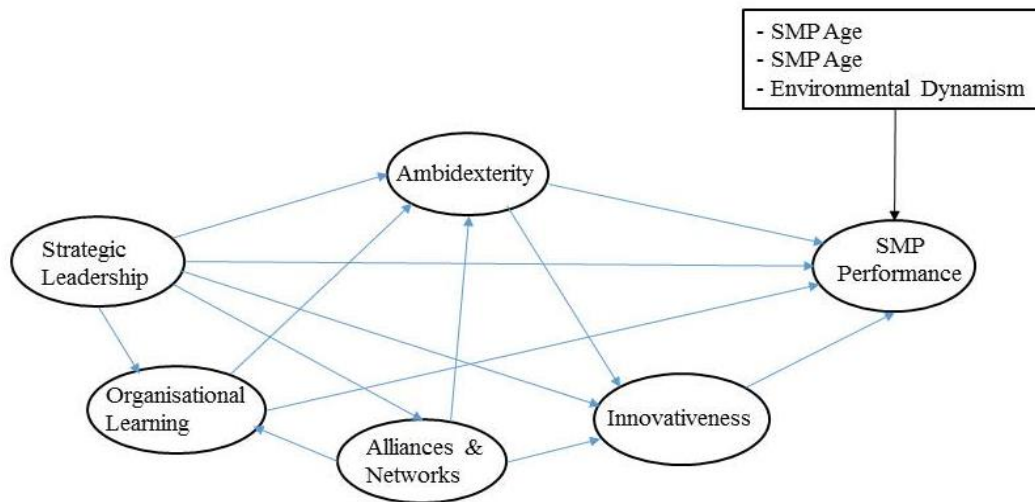


Figure 8.1: Growth-oriented model for sustainable performance improvement.

As shown in Fig 8.1 above, the five DCs constructs identified in the model for growth-oriented firms are: strategic leadership (orientation), alliances and networks, organisational learning, ambidexterity, and innovativeness. This model is the same as the conceptual model developed and tested in this research (see Chapters 3, 5 & 6). This is because the management of the growth-oriented firm aims to expand the business by diversifying into the provision of new services, moving into new markets, new industries, winning new clients, and improving its financial and non-financial performance.¹³¹

To achieve these objectives, the results of the study assert that the growth-oriented SMP invests in developing the DCs identified in the model, which enable it to scan the environment, and to deploy such DCs in order to adapt to the challenges it is presented with. The results of the study show that these DCs function in a nomological network, to enable the firm to reinvent itself, in order to gain competitive advantage, and to achieve long-term improvement in its performance.

¹³¹ It is important to note that the empirical data gathered in this research could not be used to test this model for growth-oriented firms only, because the survey was not designed to identify and capture growth-oriented SMPs from non-growth oriented SMPs. The differences in growth orientation of the SMPs were identified in the qualitative part of the research.

8.4.2 Non-Growth Oriented firms (SMPs) – The Model

Although the non-growth oriented SMP faces challenges posed by the environment, and need specific dynamic competencies (DCs) to ensure the firm's adaptability, the degree to which such DCs are needed differs, to an extent, from the DCs requirements of growth-oriented SMPs. For example, because non-growth oriented SMPs do not actively seek new clients, they do not consider diversifying into providing other services. Also, because these firms do not seek expansion, size is not usually a constraint to improving performance. Therefore, the following model is proposed:

Fig 8.2: Non-Growth Oriented Model

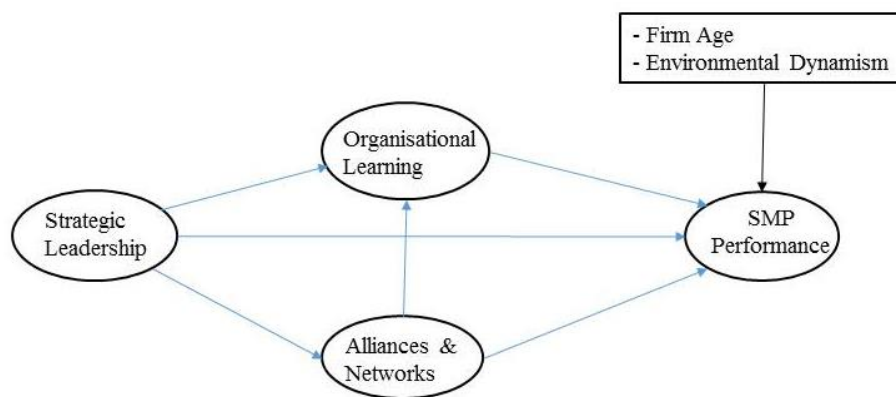


Figure 8.2: Non-growth oriented model for performance improvement

The model in Fig 8.2 above depicts the nomological network of DCs necessary to enable improvement in the performance of a non-growth oriented firm.¹³² This study asserts that although a firm may not be growth-seeking, it is still confronted by environmental dynamism such as market turbulence, technological changes, and changes in legislation.

Because the non-growth oriented firm does not seek to expand by diversifying its service offerings and/or by winning new work, it focuses on maintaining its existing client portfolio. To achieve this objective, the firm will still have to ensure client satisfaction and retention by improving the quality of its services, and will need to adapt to changes imposed by the business environment, all of which require the development and deployment of its DCs.

¹³² The empirical data gathered in this research could not be used to test this model for non-growth oriented firms only, because the survey was not designed to identify and distinguish growth-oriented SMPs from non-growth oriented SMPs. The differences in growth orientation of the SMPs were identified in the qualitative part of the research.

However, considering that there is no desire to add new service lines to its portfolio of service offerings, and considering investment in DCs is a cost to the firm, the non-growth oriented firm does not need to adopt an ambidextrous orientation and does not need to be innovative. Therefore, because of the costs involved, such firms would not be able to justify investments in the DCs of ambidexterity and innovativeness. These are in addition to the finding that because these firms do not aim to expand, the size of the firm is not expected to be such a constraint.

Cognisant of the foregoing arguments, for the non-growth oriented SMP to achieve a level of performance that enables it to maintain its presence in the market for the provision of business support services to SMEs, the DCs of strategic leadership, organisational learning, and alliances & networks are needed. Strategic leadership is required because as with the growth-oriented firms, this dynamic capability sets the tone at the top of the firm by specifying its strategic direction and intent. Strategic leadership is also responsible for decisions on developing the DCs of learning, and alliances & networks.

Organisational learning is necessary to meet the knowledge requirements of the firm. This will enable the firm to keep abreast of changes in the business environment and improve the quality of its services, thus increasing client satisfaction and retention, with the eventual significant and positive effect on the firm's performance.

The SMP's alliances and networks will enable it to learn about changes in the business environment and also to understand how network partners approach certain issues that may affect the industry. Importantly also, with respect to certain services for which there is no in-house expertise, the firm could use its alliances & network partners to maintain the provision of such services to clients. The effect of the deployment of this dynamic capability is to positively and significantly influence both the learning of the firm and its performance.

8.5 CONTRIBUTIONS OF THE RESEARCH

Following the findings from the analysis of both the quantitative and qualitative data, this study makes a number of contributions to the literature and to knowledge, firstly to understanding of the DCs theory and, secondly to managerial decision making.

8.5.1 Theoretical Implications

The study analysed SMPs by size groups and by so doing, it was possible to compare and analyse how size affected the deployment and effects of DCs on: (i) the relationship between the DCs constructs; and (ii) performance of the SMP. Although small accountancy firms in Norway (and Scotland) were the subject of the study by Doving et al. (2004), these researchers focused on factors influencing diversification and did not split the firms between micro and small accountancy practices. By demonstrating how SMP size influences the effects of the relationship between DCs, and the relationship between DCs and performance for micro SMPs (1–9 employees) separately from small SMPs (10–49 employees), this study makes a contribution to understanding the effect of SMP size on the deployment of DCs, and the effects of such DCs on performance.

The impact of age on the performance of firms has been studied (e.g. Battisti and Deakins 2017; Arend 2014). However, a detailed search of the literature did not identify any study relating to SMPs or accountancy firms. Therefore, by analysing and demonstrating the influence of SMP age on the effects of DCs on performance, this study fills that gap in the literature and enhances understanding of the effect of SMP age on the deployment of DCs, and on the benefits resulting therefrom.

The study provides a complete, comprehensive and integrated model that highlights the first-order and higher-order DCs constructs necessary to enable the SMP learn and acquire knowledge, improve its efficiency and quality of service delivery, be innovative and diversify its service offerings, adapt to changes in business environment, and achieve sustained improved performance. The study, therefore, makes a significant contribution in this area by bringing to the fore, and enhancing understanding of the relationship between the first-order and higher-order DCs, and the relationships between the higher-order DCs and how these relationships impact on SMP competitive advantage and performance.

Furthermore, the results underscore the importance of strategic leadership/orientation as the exogenous construct in the nomological network of DCs geared at enabling the firm achieve sustainable improvement in performance by allowing its adaptation to changes in the business environment. This is because strategic leadership as the first-order dynamic capability, directly and indirectly influences the development of all the higher-order DCs. This extends

and enhances understanding of the argument that strategic intent, internal capital development and external alliances are important in fostering diversification of services provided by practice accountants (e.g. Doving and Gooderham 2008).

The research used empirical investigation to demonstrate that strategic leadership does not only have direct influence on ambidexterity of the SMP, but that it also has indirect effects through organisational learning, and alliances & networks DCs. By so doing, and by focusing on small and medium-sized accountancy (professional services) firms in the UK, it contributes to the existing body of knowledge by extending Lubatkin et al. (2006) who focused only on the relationship between top management behavioural integration and ambidexterity in services firms in the US.

This empirical study shows that the direct effect of strategic leadership on performance is positive but non-significant although its total effects are significantly positive. Theoretically, this implies that although strategic leadership as a first-order dynamic capability is important, it is only with the deployment of the other higher-order DCs that the firm will maximise the benefits from its DCs. This enhances knowledge in the area and contributes to the literature.

The study shows SMPs use their alliances & networks primarily to learn and gain new knowledge, than as a direct source of innovativeness. Such new knowledge which impacts on the firm's learning and ambidexterity is made possible by the webinars, seminars, conferences and other events organised by the network. It equally shows that, secondarily, SMPs use the services offered by network partners to diversify their service provision, thus impacting on the firm's innovativeness. This is done either by SMP connecting its client and partner for the services to be delivered by the partner directly to the client, or by serving as a window through which the services are provided by the partner to its clients. These findings make a contribution to the literature in (i) shedding new light on, and bringing to the fore, the effects of the firm's alliances and networks on its learning and ambidexterity; (ii) the role of alliances & networks on diversification of SMP service offerings, not only supporting but extending Doving and Gooderham (2008) on the methods of achieving such diversification.

A number of studies have identified environmental turbulence as consisting of market turbulence, and technological turbulence (e.g. Pavlou and El Sawy 2011). However, this study finds that in the accountancy practice industry in the UK, environmental turbulence also includes legislative (regulatory) turbulence. This is important because although SMEs are

required to comply with such changes, SMPs as their business service providers and consultants have the choice to either: (i) act promptly by deploying their DCs in order to take on the challenges and seize opportunities brought about such changes; or (ii) do not take action and let competitors seize the opportunities and eventually win over their clients. The decision to trigger such DCs would depend on management's perception of the potential effects of such changes. This finding contributes to filling the gap in extant literature.

The study finds that SMPs can be split into growth oriented SMPs and non-growth oriented SMPs. This distinction helps to understand why certain SMPs do not compete (seek) for new clients and may explain the attitude towards investing in, and deploying DCs by SMPs. This is an important and novel contribution, considering that this distinction had not been identified in previous studies. It also shows that strategic direction (championed by strategic leadership – a dynamic capability) of growth-oriented SMPs is instrumental in driving diversification and growth. This is in contrast to Jarvis and Rigby (2011) who contend that product diversification in SMPs is demand-driven, and does not result from the strategic direction or entrepreneurial orientation or a strategic choice of a distinct business model of these firms.

8.5.2 Managerial Implications

The study results highlight the importance and performance of each dynamic capability construct in the nomological model, in respect of firm performance. By demonstrating the importance of each construct (based on its contribution to SMP performance) as well as its performance, SMPs are able to identify the constructs with high importance but with currently less optimal performance so that efforts could be focused to optimise the performance of such constructs. Therefore, accountancy practitioners would be expected to maximise the performance of strategic leadership, considering it is the construct with the highest importance and whose performance is yet to be maximised. This finding is novel with respect to DCs in the SMP sector (especially in the UK) and, thus, makes a significant contribution to the literature in this regard.

Similarly, with respect to SMP performance, empirical results for the importance and performance analysis of the DCs constructs show a greater importance of ambidexterity over innovativeness. This is because an effective ambidextrous orientation would lead to greater

innovativeness, considering the contribution of exploration of new knowledge to innovativeness. This is a significant contribution especially for management decision making because although prior studies have discussed ambidexterity and innovativeness in relation to a firm's performance, an illustration (an expression) of the degree of importance of each, in terms of contribution, has been absent.

The qualitative arm of this research finds that although SMPs could improve the delivery of services, it is difficult for significant cost savings to be made since cost in SMPs is principally constituted of labour cost. This cost cannot be scaled down while maintaining the quality of service delivery due to limitation in the number of clients that can be served and the number of hours that can be put in, by an employee, before experiencing diminishing returns in efficiency. This finding provides empirical evidence that sheds light on the cost structure in SMPs and contributes to the literature in this regard. It also brings to light the importance of adopting technology that could be used to further improve the efficiency and quality of service delivery, although to a limited extent.¹³³

Because of the need to build its client base and survive, young SMPs are indiscriminate in the quality of clients they take on. However, as the firms age and become well established, they tend to not only attract better quality clients but are also able to cherry-pick clients that are likely to be of good fit to them. This is an important contribution as it sheds light on why the quality of clients for younger firms may be different from those of older SMPs. It also explains why young SMPs may find it difficult to heed to Doving et al.'s (2004) call for the need for SMPs to position themselves to provide compliance services to larger small firms who are relatively capable of buying various specialised consultancy services, thereby enabling them to diversify their service offerings.

8.6 LIMITATIONS OF THE RESEARCH

In preparing the questionnaire responses relating to market turbulence (competitive intensity) for the quantitative analysis, the responses for points 1 to 4 on the Likert scale were grouped together (and averaged) as respondents who perceive that the market is not turbulent (i.e., the

¹³³ This limitation is grounded in that even with the adoption of technology, the accountant-client relationship will still be important. This relationship is buttressed by the personal contacts, especially in one-to-one meetings, between the partner/director or manager and the clients. Therefore, adoption of technology will not replace the need for such human contacts (i.e. the meetings).

market is not competitively intensive). Equally, the survey responses relating to market turbulence, for points 5 to 7 on the Likert, were grouped together as respondents who perceive the market to be turbulent (i.e., the market is competitively intensive). As the first grouping (i.e. the market is not perceived to be competitively intensive) includes respondents who perceive the market to be neither competitively intensive nor not competitively intensive (i.e. the market is neither turbulent nor not turbulent)¹³⁴, the inclusion could have an undesired effect on the results of the analysis. It is also important to indicate the difference in sample size between SMPs who perceive the market to be competitively intensive (n = 237) and those that perceive that the market is not competitively intensive (n = 78). However, this difference could not have impacted the results and its interpretation considering that n = 78 is still larger than the required minimum sample size of 40 observations (based on the 10 X 4 (minimum number of arrows pointing at a latent variable)) for PLS-SEM analysis. See Peng and Lai (2012).

The research was based on a cross sectional study design. The use of cross sectional data precludes a time difference (Hilton and Patrick 1969) as data are recorded only once. This makes it difficult to discern causal inferences as differing outcomes could be obtained should another time frame be used (Sedgwick 2014; Levin 2006). However, cross-sectional studies are best in determining prevalence (Mann 2003). Furthermore, the use of a large random sample of SMPs, (N=315), representative of the entire SMP population in the UK, addresses the generalisability of the findings of this research. This is in line with Johnson and Hall (1988), and with Barnett et al. (2012) whose findings were consistent with studies conducted by other researchers.

8.7 SUGGESTIONS FOR FUTURE RESEARCH

Considering the limitations posed by a cross sectional study, it would be important to investigate, using longitudinal data, the effects of DCs on the competitive advantage and performance of SMPs. Such a study would enhance understanding of the effects of DCs over a specific period of time. It will also shed more light on the moderating role of SMP size on the benefits of deploying DCs, using longitudinal data.

¹³⁴ This refers to point 4 of the Likert scale on the survey questionnaire, and reads as follows: 'Neither agree nor disagree.'

Furthermore, a study with a larger sample size of medium-sized accountancy firms (i.e. SMPs with 50 – 249 employees) would enable statistical analysis of the effects of SMP size, between small and medium-sized accountancy firms, on the deployment of DCs. Also, an empirical investigation of the significance of the impact of a mediating variable on the effect of the direct influence of an independent (or endogenous) dynamic capability construct on a dependent variable (as in the research model) would be important, as such a study would identify the mediators and enhance understanding of the magnitude and significance of their effects.

There are different rates of growth of economic activities in England, Scotland, Wales and Northern Ireland.¹³⁵ As this varied rate of economic growth may impact on the business activities in each region as well as an SMEs' use of the services of accountants, it would be important to empirically investigate the impact of location as a moderating factor on the effects of deploying DCs in SMPs. Also, it would be important to investigate the moderating effect of legislative (regulatory) changes on the deployment of DCs by SMPs in the UK. This is important considering that the perception of the sufficiency of the lead times to prepare for the implementation of such changes is different amongst SMPs.

From the findings of the study, two post-analysis models have been proposed, based on the growth-orientation of SMPs as professional services firms. These models are holistic and could be applied to small and medium-sized professional services firms in general. Future research could seek to obtain relevant data to empirically test the robustness and predictive relevance of each model.

The measurement items used in this study were adapted from other studies. The use of these adapted scales in future research relating accountancy firms in countries other than the UK would go a long way to validate the scales.

8.8 CONCLUSION

The study demonstrates the necessity for the SMP to invest in, and deploy, a set of DCs which interact with each other, to sense and proactively respond to changes in its environment. These DCs are strategic leadership, alliances & networks, organisational learning,

¹³⁵ These are the four historic countries that make up the UK.

ambidexterity, and innovativeness whose direct and indirect relationships in a nomological network (presented in the research model) enable the firm to competitively position itself in the market, and to achieve long-term improvement in its performance.

The competitive advantage and improved performance result from the fact that by deploying the DCs, the SMP adopts a proactive approach whereby it continuously scan the environment to identify, assess and understand the issues affecting SMEs – its clients and potential clients. This information enables the SMP to provide services that are solutions to the needs of these SMEs. With its DCs, SMPs are also able to scan, identify and understand changes that impact on their businesses as practising accountants. This may include changes in: (a) technology; (b) competition from: (i) the Big 4 and other large accountancy firms; (ii) other SMPs; (iii) unqualified accountants and qualified but unregistered accountants; (c) the macro-economic condition of the country. This is consistent with Nair et al. (2014) who argue for the need for firms to have a complex set of DCs in order to be able to respond to the complexity of environmental changes.

SMPs, therefore, require DCs that would enable the firm to scan the environment to identify threats and opportunities, and to make prompt and appropriate decisions that ensure their adaptability to the changing environment. The benefits of the deployment of the DCs are moderated by the SMP's (its director(s)) perception of the intensity of environmental changes, SMP size, and SMP age. Two types of SMPs can be identified: growth-oriented and non-growth oriented. For growth-oriented SMPs, the size of the firm could be a moderator in its ability to invest in, and deploy DCs.

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APPENDICES

APPENDIX A

Table 4.2: Latent constructs and their measurement items (indicators)

CONSTRUCT	CODE	DESCRIPTION OF INDICATORS	ADAPTED FROM
Business Environment	ED_01	Environmental changes in our industry are <i>very</i> difficult to forecast or predict.	Schilke (2014a); Pavlou and El Sawy (2011)
	ED_02	The level of competition in our industry is extremely intense.	Birkinshaw, Hood, and Jonsson (1998); Jaworski and Kohli (1993); DeSarbo et al. (2005)
	ED_03	The demands on our service or product market are continuously changing.	Schilke (2014a); Pavlou and El Sawy (2011); Volberda and Van Bruggen (1997); Jaworski and Kohli (1993)
Strategic Leadership / Strategic Orientation	SL_01	Our firm does a lot of market research.	Jimenez-Jimenez & Cegarra-Navarro (2007)
	SL_02	Our firm is effective in analysing knowledge acquired about clients or potential clients.	Chaston, Megicks, and Williams (2005)
	SL_03	Our company uses all sources of knowledge to provide the best service or product.	Chaston, Megicks, and Williams (2005)
	SL_04	Our firm adapts quickly to a change in the business environment.	Jimenez-Jimenez & Cegarra-Navarro (2007)
	SL_05	Our firm adopts a competitive position that aims to overtake the competitors.	Wang (2008)
	SL_06	Senior management (Partner(s)/Director(s)) believe the business environment requires wide-ranging measures to achieve the firm's objectives.	
	SL_07	Our firm is willing to try new ways of doing things, and/or seek for new solutions.	Wang (2008)
SL_08	Senior management are willing to take risks to seize or explore various promising growth opportunities.	Wang and Ahmed (2004)	

CONSTRUCT	CODE	DESCRIPTION OF INDICATORS	ADAPTED FROM
Strategic Leadership / Strategic Orientation	SL_09	Our company's policy is to adopt up-to-date technologies (e.g. most recent accounting software).	Al-Ansaari, Bederr, and Chen (2015)
	SL_10	Our organisation uses technologies to position itself ahead of competitors.	
	SL_11	We encourage internal sharing of market information to understand consumer or competitor behaviours.	Al-Ansaari, Bederr, and Chen (2015)
	SL_12	Our firm responds immediately when our clients are targeted by competitors.	
	SL_13	Our company analyses clients' needs in order to develop bespoke marketing programmes.	Chaston, Megicks, and Williams (2005)
Alliances & Networks	AN_01	Our firm identifies possible strategic partners to explore new knowledge or technology to improve resources.	Al-Ansaari, Bederr, and Chen (2015)
	AN_02	Our firm has collaborative agreements with other firms for provision of complementary services (to clients).	
	AN_03	Employees in our firm always connect and share information with fellow organisations in our network.	Lee, Chen, and Shyr (2011)
	AN_04	Employees in our firm always connect and share information with other organisations [<i>or with the industry</i>].	
	LE_01	Senior management agree that the ability of our organisation to learn is the key to gaining competitive advantage.	Wang (2008)

CONSTRUCT	CODE	DESCRIPTION OF INDICATORS	ADAPTED FROM
Organisational Learning	LE_02	Our firm considers employee learning as an investment, not an expense.	
	LE_03	In our firm, we often scan the environment to identify new business opportunities.	Pavlou and El Sawy (2011)
	LE_04	We periodically review the likely effect of changes in our business environment on clients.	
	LE_05	We frequently review our service or product development efforts to ensure they are in line with the needs of clients.	
	LE_06	Our organisational systems and procedures support learning and innovativeness in services and/or service delivery.	Jimenez-Jimenez & Cegarra-Navarro (2007)
	LE_07	Employees who have had learning, training or development are encouraged to share the learning with colleagues.	Chaston, Megicks, and Williams (2005)
	LE_08	In our firm, teamwork is a common practice.	Jimenez-Jimenez & Cegarra-Navarro (2007)
	LE_09	Our firm has learned much new knowledge over the past three years.	Garcia-Morales, Llorens-Montes, Verdu-Jover (2006)
	LE_10	Our firm's performance has been influenced by new learning it has acquired over the past three years.	
	LE_11	Our company is a firm that continuously learn.	
		AM_01	Our firm searches for new ideas in knowledge and/or technology, by thinking creatively [<i>thinking 'outside the box'</i>].
AM_02		We develop and commercialises services or products that are new to the firm.	Lubatkin et al. (2006); Jansen, Van den Bosch, and Volberda (2006)

CONSTRUCT	CODE	DESCRIPTION OF INDICATORS	ADAPTED FROM
Ambidexterity	AM_03	Our company ventures into new market segments.	Lubatkin et al. (2006)
	AM_04	Our firm accepts demands that go beyond its existing services and/or products.	Jansen, Van den Bosch, and Volberda (2006)
	AM_05	Our company continuously improves the reliability of its services and/or products.	Lubatkin et al. (2006)
	AM_06	We continuously improve the quality of our services or products to clients.	Lubatkin et al. (2006); Jansen, Van den Bosch, and Volberda (2006)
	AM_07	Our firm improves efficiency in the provision of services and/or products.	
SMP Innovativeness	IN_01	Our firm constantly improves its operational and business processes.	Schilke (2014a); Wang and Ahmed (2004)
	IN_02	In the past three years, our firm has developed new management approaches and/or methods.	Wang and Ahmed (2004)
	IN_03	When we are unable to solve a problem using conventional methods, we improvise on new approaches.	
	IN_04	Our firm has introduced and marketed new services and/or products during the past three years.	Wang and Ahmed (2004); Messeghem (2003)
	IN_05	Clients often perceive our services or products as novel.	Wang and Ahmed (2004)
	IN_06	In comparison with our direct competitors, our firm has a higher success rate in new services and/or products launch.	
SMP Innovativeness	IN_07	For our services or products, we develop marketing programmes that are new in the market and/or industry.	Wang and Ahmed (2004); Hogan et al. (2004)

CONSTRUCT	CODE	DESCRIPTION OF INDICATORS	ADAPTED FROM
	IN_08	Changes in our services or products have often been quite significant.	Wang and Ahmed (2004); Messeghem (2003)
	IN_09	New services or products by our firm usually take us up against competitors.	Wang and Ahmed (2004)
SMP Performance	FP_01	We have achieved high sales or revenue growth in our main services and/or products in the past three years.	Arend (2014); Avci, Madanoglu, and Okumus (2011); Garcia-Morales, Llorens-Montes, and Verdu-Jover (2006)
	FP_02	Our firm has reduced its costs in the past three years.	Avci, Madanoglu, and Okumus (2011)
	FP_03	Our firm has increased its profitability in the past three years.	Avci, Madanoglu, and Okumus (2011); Garcia-Morales, Llorens-Montes, and Verdu-Jover (2006)
	FP_04	Client satisfaction in our firm has increased in the past three years.	Avci, Madanoglu, and Okumus (2011)
	FP_05	Client loyalty in our firm has improved in the past three years.	
	FP_06	In the past three years, our firm has increased its market share.	Arend (2014); Schilke (2014a); Avci, Madanoglu, and Okumus (2011)
FP_07	Our firm has gained strategic advantages over its direct competitors.	Arend (2014); Schilke (2014a)	

APPENDIX B

Dynamic Competencies, Competitive Positioning and Performance in Small and Medium-sized Accounting Firms

Dear -----,

We are conducting a study which aims to determine the relationship between distinctive competencies, firm performance and competitive advantage in small and medium-sized accountancy firms (SMPs).

The study is being conducted by CHARLES AMBILICHU at Coventry University. You have been selected to take part in this questionnaire survey because your firm was randomly selected in our sample of SMPs in the UK. Your participation in the survey is entirely voluntary. If you are happy to take part, please answer the following questions relating to entrepreneurial orientation, learning, exploitation and exploration of knowledge, corporate alliances and networks, innovativeness, environmental changes and performance. Your answers will help us to identify the dynamic competencies that impact on the performance and competitive positioning of SMPs.

The survey should take approximately 10 minutes to complete. Your answers will be treated confidentially and the information you provide will be kept anonymous in any research outputs/publications. Your data will be held securely on the university's server. All data will be deleted by 30/11/2019.

The project has been reviewed and approved through the formal Research Ethics procedure at Coventry University. For further information, or if you have any queries, please contact the lead researcher: CHARLES AMBILICHU [e-mail: cambilic@uni.coventry.ac.uk]. If you have any concerns that cannot be resolved through the lead researcher, please contact Dr KAMIL OMOTESO [e-mail: kamil.omoteso@coventry.ac.uk].

Thank you for taking the time to participate in this survey. Your help is very much appreciated.

Please give confirmation of informed consent by responding to the statement below:

I have read and understood the above information. I understand that, because my answers will be fully anonymized, it will not be possible to withdraw them from the study once I have completed the survey. I agree to take part in this questionnaire survey and I consent for my answers to be used as described.

YES

NO

RESEARCH QUESTIONNAIRE

ABOUT YOUR FIRM

ACCOUNTANCY BODY	AAPA	ACCA	ICAEW	ICAI	ICAS	Other
Please indicate the accountancy body to which your firm is a member.						

NUMBER OF EMPLOYEES	[1-9]	[10-49]	[50-249]	[250-500]
Number of staff employed by your firm				

NUMBER OF YEARS IN BUSINESS	Less than 5 Years	6 - 10 Years	11 - 15 Years	16 - 20 Years	Over 20 Years
Our firm has been in business for					

CHANGES IN THE BUSINESS ENVIRONMENT

To what extent do you agree or disagree with the following statements about changes in the business environment affecting your firm? Please select only one (1) answer per row.							
	Totally disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Totally agree
Environmental changes in our industry are <i>very</i> difficult to forecast or predict.							
The level of competition in our industry is extremely intense.							
The demands on our service or product market are continuously changing.							

STRATEGIC ORIENTATION

To what extent do you agree or disagree with the following statements about the strategic orientation of your firm? Please select only one (1) answer per row.							
	Totally disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Totally agree
Our firm does a lot of market research.							
Our firm is effective in analysing knowledge acquired about clients or potential clients.							
Our company uses all sources of knowledge to provide the best service or product.							
Our firm adapts quickly to a change in the business environment.							
Our firm adopts a competitive position that aims to overtake the competitors.							

To what extent do you agree or disagree with the following statements about the strategic orientation of your firm? Please select only one (1) answer per row.							
	Totally disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Totally agree
Senior management (Partner(s)/Director(s)) believe the business environment requires wide-ranging measures to achieve the firm's objectives.							
Our firm is willing to try new ways of doing things, and/or seek for new solutions.							
Senior management are willing to take risks to seize or explore various promising growth opportunities.							
Our company's policy is to adopt up-to-date technologies (e.g. most recent accounting software).							
Our organisation uses technologies to position itself ahead of competitors.							
We encourage internal sharing of market information to understand consumer or competitor behaviours.							
Our firm responds immediately when our clients are targeted by competitors.							
Our company analyses clients' needs in order to develop bespoke marketing programmes.							

CORPORATE ALLIANCES & NETWORKS

To what extent do you agree or disagree with the following statements about alliances and networks of your firm? Please select only one (1) answer per row.							
	Totally disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Totally agree
Our firm identifies possible strategic partners to explore new knowledge or technology to improve resources.							
Our firm has collaborative agreements with other firms for provision of complementary services (to clients).							
Employees in our firm always connect and share information with fellow organisations in our network.							
Employees in our firm always connect and share information with other organisations [<i>or with the industry</i>].							

LEARNING

To what extent do you agree or disagree with the following statements about learning in your firm? Please select only one (1) answer per row.							
	Totally disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Totally agree
Senior management agree that the ability of our organisation to learn is the key to gaining competitive advantage.							
Our firm considers employee learning as an investment, not an expense.							
In our firm, we often scan the environment to identify new business opportunities.							
We periodically review the likely effect of changes in our business environment on clients.							
We frequently review our service or product development efforts to ensure they are in line with the needs of clients.							
Our organisational systems and procedures support learning and innovativeness in services and/or service delivery.							
Employees who have had learning, training or development are encouraged to share the learning with colleagues.							
In our firm, teamwork is a common practice.							
Our firm has learned much new knowledge over the past three years.							
Our firm's performance has been influenced by new learning it has acquired over the past three years.							
Our company is a firm that continuously learn.							

EXPLORATION & EXPLOITATION OF KNOWLEDGE

To what extent do you agree or disagree with the following statements about exploration and exploitation of knowledge by your firm? Please select only one (1) answer per row.							
	Totally disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Totally agree
Our firm searches for new ideas in knowledge and/or technology, by thinking creatively [<i>thinking 'outside the box'</i>].							
We develop and commercialises services or products that are new to the firm.							
Our company ventures into new market segments.							
Our firm accepts demands that go beyond its existing services and/or products.							

To what extent do you agree or disagree with the following statements about exploration and exploitation of knowledge by your firm? Please select only one (1) answer per row.							
	Totally disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Totally agree
Our company continuously improves the reliability of its services and/or products.							
We continuously improve the quality of our services or products to clients.							
Our firm improves efficiency in the provision of services and/or products.							

FIRM INNOVATIVENESS

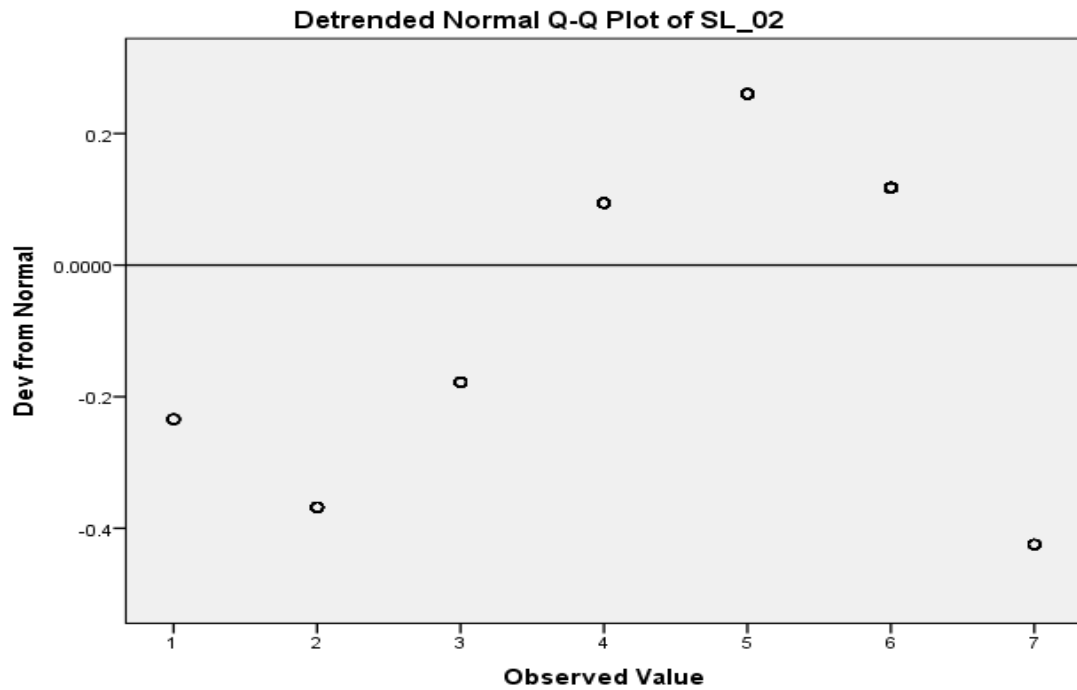
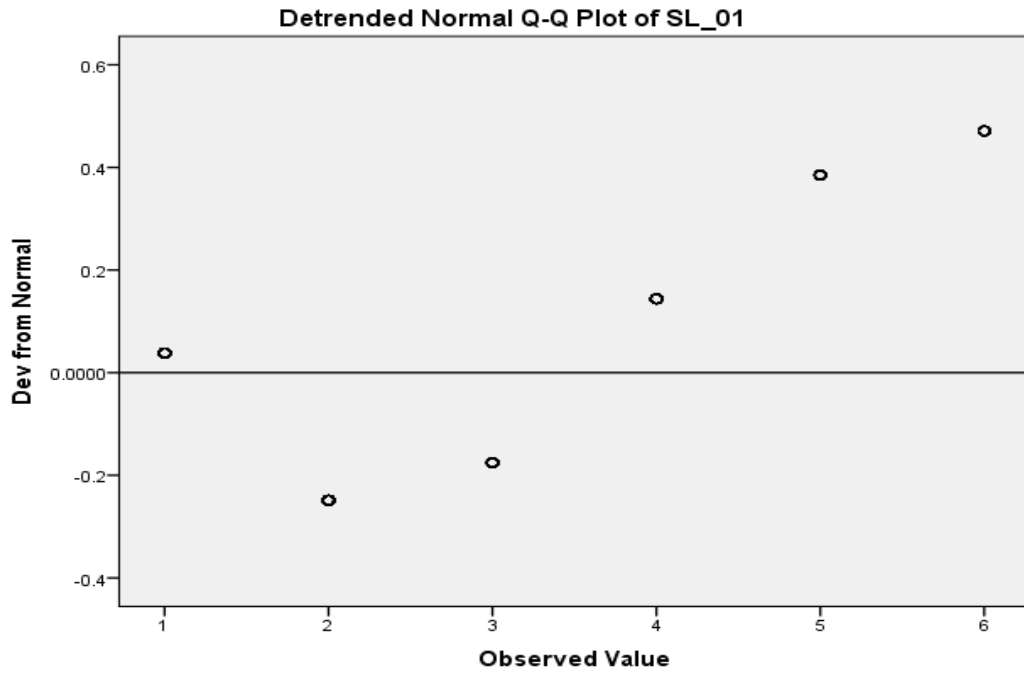
To what extent do you agree or disagree with the following statements about innovativeness in your firm? Please select only one (1) answer per row.							
	Totally disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Totally agree
Our firm constantly improves its operational and business processes.							
In the past three years, our firm has developed new management approaches and/or methods.							
When we are unable to solve a problem using conventional methods, we improvise on new approaches.							
Our firm has introduced and marketed new services and/or products during the past three years.							
Clients often perceive our services or products as novel.							
In comparison with our direct competitors, our firm has a lower success rate in new services and/or products launch.							
For our services or products, we develop marketing programmes that are new in the market and/or industry.							
Changes in our services or products have often been quite significant.							
New services or products by our firm usually take us up against competitors.							

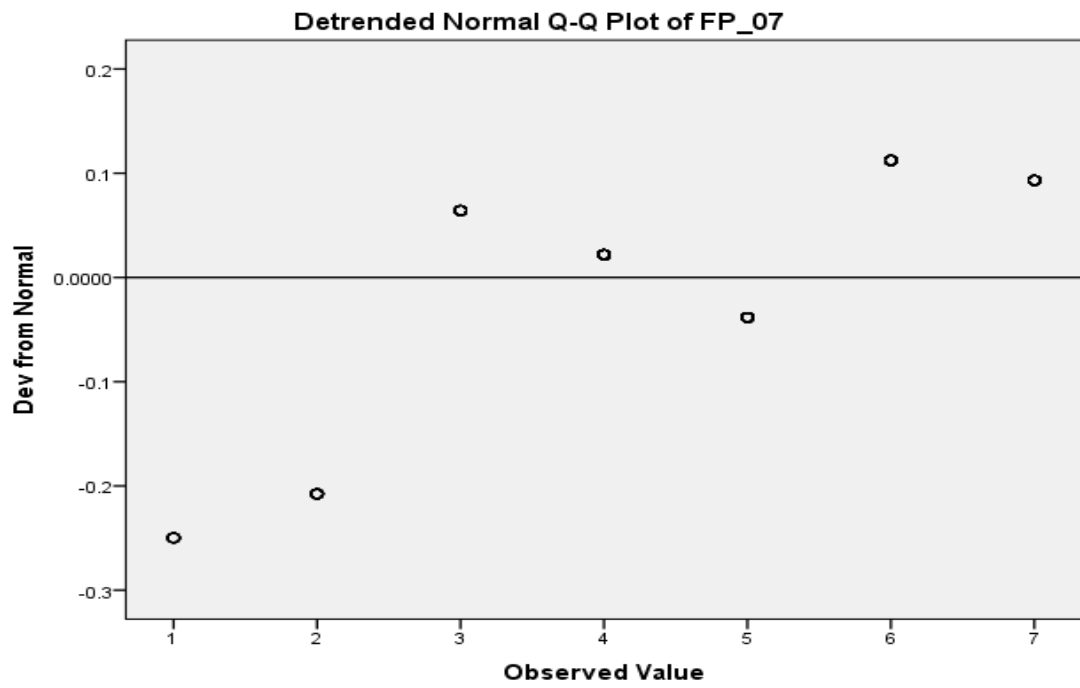
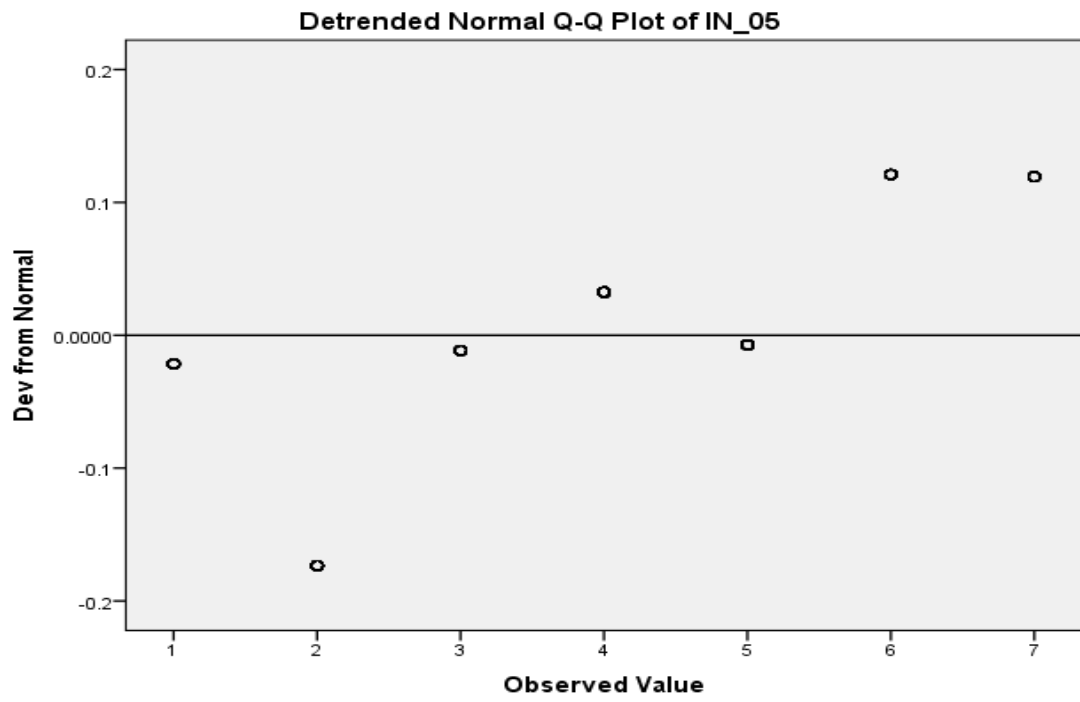
FIRM PERFORMANCE

To what extent do you agree or disagree with the following statements about the performance of your firm? Please select only one (1) answer per row.							
	Totally disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Totally agree
We have achieved high sales or revenue growth in our main services and/or products in the past three years.							
Our firm has reduced its costs in the past three years.							
Our firm has increased its profitability in the past three years.							
Client satisfaction in our firm has increased in the past three years.							
Client loyalty in our firm has improved in the past three years.							
In the past three years, our firm has increased its market share.							
Our firm has gained strategic advantages over its direct competitors.							

APPENDIX C

Figure 5.1: Q-Q plots of some of the skewness & kurtosis for some of the manifest variables





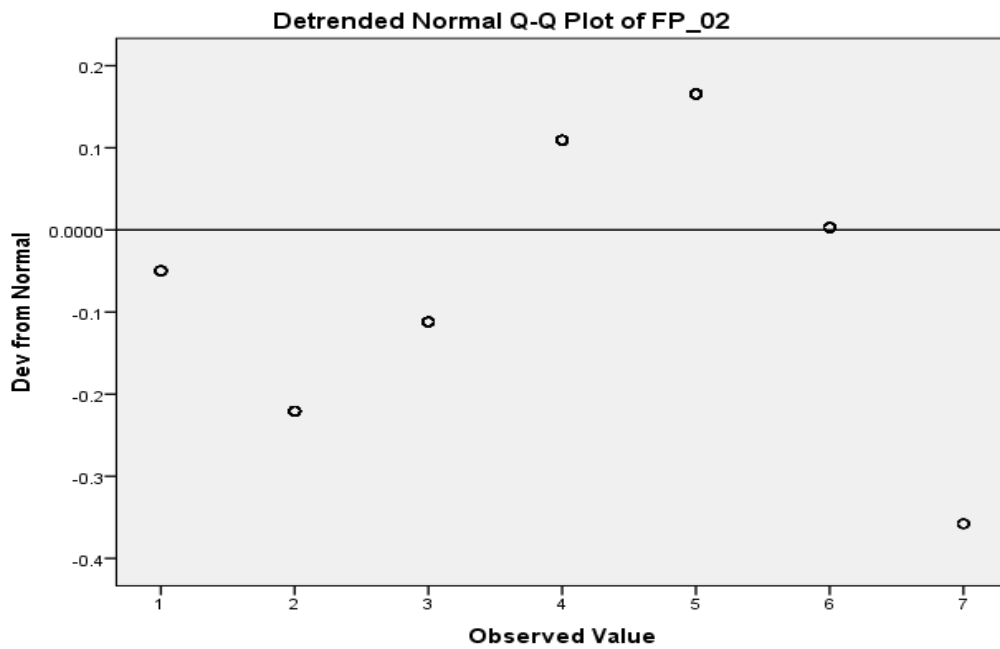
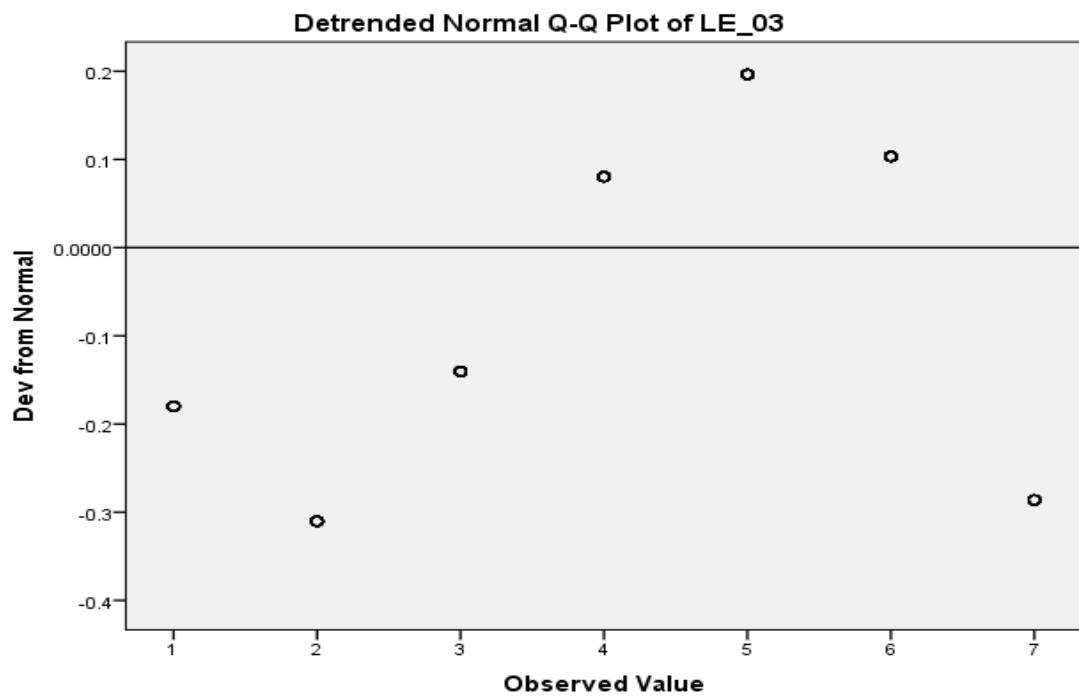


Table 5.4a: Descriptive Statistics showing the minimum and maximum response, and the mean and standard deviation per indicator

Indicators	N	Range	Minimum	Maximum	Mean	Std. Deviation
SL_01	317	5	1	6	2.48	1.449
SL_02	317	6	1	7	4.69	1.622
SL_03	317	6	1	7	5.6	1.188
SL_04	317	6	1	7	5.24	1.211
SL_05	317	6	1	7	4.62	1.586
SL_06	317	6	1	7	4.95	1.391
SL_07	317	5	2	7	5.76	1.037
SL_08	317	6	1	7	4.84	1.581
SL_09	317	6	1	7	5.57	1.387
SL_10	317	6	1	7	4.87	1.554
SL_11	315	6	1	7	4.31	1.54
SL_12	316	6	1	7	5.09	1.464
SL_13	317	6	1	7	3.88	1.774
AN_01	316	6	1	7	4.36	1.795
AN_02	317	6	1	7	4.7	1.873
AN_03	313	6	1	7	3.84	1.629
AN_04	314	6	1	7	3.25	1.53
LE_01	317	5	2	7	5.72	1.061
LE_02	316	6	1	7	6.02	0.951
LE_03	317	6	1	7	4.59	1.602
LE_04	316	6	1	7	5.07	1.325
LE_05	317	6	1	7	5.38	1.22
LE_06	317	6	1	7	5.27	1.213
LE_07	311	6	1	7	5.81	1.054
LE_08	310	6	1	7	5.95	1.154
LE_09	316	5	2	7	5.9	0.987
LE_10	317	6	1	7	5.63	1.116
LE_11	317	4	3	7	6.04	0.878
AM_01	316	6	1	7	4.94	1.459
AM_02	317	6	1	7	4.4	1.601
AM_03	317	6	1	7	3.94	1.629
AM_04	316	6	1	7	4.78	1.656
AM_05	317	6	1	7	5.61	0.99
AM_06	317	6	1	7	5.71	0.941
AM_07	317	5	2	7	5.72	0.914
IN_01	317	5	2	7	5.3	1.142
IN_02	316	6	1	7	4.93	1.505
IN_03	317	6	1	7	5.17	1.186
IN_04	317	6	1	7	4.86	1.737

Indicators	N	Range	Minimum	Maximum	Mean	Std. Deviation
IN_05	317	6	1	7	3.9	1.556
IN_06	316	6	1	7	4.1	1.326
IN_07	317	6	1	7	3.26	1.476
IN_08	316	6	1	7	3.82	1.612
IN_09	315	6	1	7	4	1.515
FP_01	316	6	1	7	4.68	1.592
FP_02	316	6	1	7	4.01	1.549
FP_03	316	6	1	7	5.05	1.449
FP_04	316	5	2	7	5.04	1.04
FP_05	316	5	2	7	5.07	1.143
FP_06	316	6	1	7	4.63	1.539
FP_07	316	6	1	7	4.23	1.46
Valid N (listwise)	303					

Table 5.4.1: MCAR Test - EM Estimated Statistics

EM Means ^a																					
SL_01	SL_02	SL_03	SL_04	SL_05	...	LE_08	LE_09	LE_10	LE_11	AM_01	AM_02	AM_03	...	IN_05	IN_06	IN_07	IN_08	...	FP_05	FP_06	FP_07
2.48	4.69	5.60	5.24	4.62	...	5.95	5.90	5.63	6.04	4.95	4.40	3.94	...	3.90	4.10	3.26	3.82	...	5.07	4.63	4.23

a. Little's MCAR test: Chi-Square = 667.386, DF = 624, Sig. = .111

NB: Complete statistics not inserted due to the length of the table the table with the statistical results.

Table 5.4.2: Univariate statistics for Missing Data Analysis, showing percentage of missing data per indicator.

Indicators	N	Mean	Std. Deviation	Missing	
				Count	Percent
SL_01	317	2.48	1.449	0	0
SL_02	317	4.69	1.622	0	0
SL_03	317	5.6	1.188	0	0
SL_04	317	5.24	1.211	0	0
SL_05	317	4.62	1.586	0	0
SL_06	317	4.95	1.391	0	0
SL_07	317	5.76	1.037	0	0
SL_08	317	4.84	1.581	0	0
SL_09	317	5.57	1.387	0	0
SL_10	317	4.87	1.554	0	0
SL_11	315	4.31	1.54	2	0.6
SL_12	316	5.09	1.464	1	0.3
SL_13	317	3.88	1.774	0	0
AN_01	316	4.36	1.795	1	0.3
AN_02	317	4.7	1.873	0	0
AN_03	313	3.84	1.629	4	1.3
AN_04	314	3.25	1.53	3	0.9
LE_01	317	5.72	1.061	0	0
LE_02	316	6.02	0.951	1	0.3
LE_03	317	4.59	1.602	0	0
LE_04	316	5.07	1.325	1	0.3
LE_05	317	5.38	1.22	0	0
LE_06	317	5.27	1.213	0	0
LE_07	311	5.81	1.054	6	1.9
LE_08	310	5.95	1.154	7	2.2
LE_09	316	5.9	0.987	1	0.3
LE_10	317	5.63	1.116	0	0
LE_11	317	6.04	0.878	0	0
AM_01	316	4.94	1.459	1	0.3
AM_02	317	4.4	1.601	0	0
AM_03	317	3.94	1.629	0	0
AM_04	316	4.78	1.656	1	0.3
AM_05	317	5.61	0.99	0	0
AM_06	317	5.71	0.941	0	0
AM_07	317	5.72	0.914	0	0
IN_01	317	5.3	1.142	0	0
IN_02	316	4.93	1.505	1	0.3
IN_03	317	5.17	1.186	0	0

Indicators	N	Mean	Std. Deviation	Missing	
				Count	Percent
IN_04	317	4.86	1.737	0	0
IN_05	317	3.9	1.556	0	0
IN_06	316	4.1	1.326	1	0.3
IN_07	317	3.26	1.476	0	0
IN_08	316	3.82	1.612	1	0.3
IN_09	315	4	1.515	2	0.6
FP_01	316	4.68	1.592	1	0.3
FP_02	316	4.01	1.549	1	0.3
FP_03	316	5.05	1.449	1	0.3
FP_04	316	5.04	1.04	1	0.3
FP_05	316	5.07	1.143	1	0.3
FP_06	316	4.63	1.539	1	0.3
FP_07	316	4.23	1.46	1	0.3

APPENDIX D

Table 5.7: Indicator Reliability and Validity - Refined Model

Latent Constructs	Indicators	Loadings	Indicator Reliability [loadings ²]	T-Values	Composite Reliability	Average Variance Extracted [AVE]
Ambidexterity	AM_01	0.769	0.591	30.213	0.905	0.577
	AM_02	0.752	0.566	25.99		
	AM_03	0.743	0.551	27.757		
	AM_04	0.681	0.464	18.034		
	AM_05	0.810	0.655	34.123		
	AM_06	0.786	0.618	29.652		
	AM_07	0.771	0.595	25.741		
Alliances & Networks	AN_01	0.826	0.682	37.686	0.833	0.556
	AN_02	0.686	0.471	15.046		
	AN_03	0.724	0.525	17.26		
	AN_04	0.739	0.546	15.992		
SMP Performance	FP_01	0.862	0.744	52.569	0.904	0.612
	FP_03	0.742	0.550	21.336		
	FP_04	0.736	0.541	23.317		
	FP_05	0.705	0.496	19.68		
	FP_06	0.849	0.721	42.667		
	FP_07	0.788	0.621	33.197		
Innovativeness	IN_02	0.714	0.509	22.948	0.914	0.604
	IN_04	0.785	0.616	33.134		
	IN_05	0.783	0.614	28.606		
	IN_06	0.809	0.654	35.186		
	IN_07	0.794	0.630	31.895		
	IN_08	0.810	0.655	28.194		
	IN_09	0.741	0.549	21.083		
Organisational Learning	LE_01	0.661	0.437	15.713	0.898	0.528
	LE_02	0.717	0.515	21.11		
	LE_05	0.613	0.375	13.471		
	LE_06	0.791	0.625	28.439		
	LE_07	0.651	0.423	14.627		
	LE_09	0.766	0.587	24.981		
	LE_10	0.727	0.529	16.729		
	LE_11	0.856	0.733	48.893		
Strategic Leadership	SL_04	0.618	0.382	14.222	0.880	0.514
	SL_05	0.789	0.623	35.839		
	SL_06	0.704	0.496	17.626		
	SL_07	0.733	0.537	23.806		
	SL_08	0.753	0.567	27.216		
	SL_10	0.782	0.611	33.291		
	SL_11	0.618	0.382	13.585		

Table 5.10a: Indicator Cross-Loadings

Indicators	Alliances & Networks	Ambidexterity	Innovativeness	Learning	Performance	Strategic Leadership
AM_01	0.479	0.769	0.522	0.579	0.494	0.591
AM_02	0.455	0.752	0.676	0.514	0.496	0.605
AM_03	0.429	0.743	0.665	0.476	0.443	0.564
AM_04	0.288	0.681	0.472	0.434	0.368	0.411
AM_05	0.323	0.810	0.483	0.607	0.518	0.558
AM_06	0.333	0.786	0.484	0.622	0.527	0.528
AM_07	0.353	0.771	0.472	0.593	0.545	0.511
AN_01	0.826	0.475	0.487	0.465	0.369	0.533
AN_02	0.686	0.297	0.257	0.268	0.207	0.276
AN_03	0.724	0.362	0.283	0.279	0.252	0.311
AN_04	0.739	0.321	0.247	0.219	0.202	0.225
FP_01	0.295	0.548	0.545	0.469	0.862	0.478
FP_03	0.203	0.380	0.381	0.349	0.742	0.330
FP_04	0.221	0.471	0.433	0.384	0.736	0.362
FP_05	0.251	0.430	0.393	0.366	0.705	0.342
FP_06	0.302	0.511	0.504	0.443	0.849	0.478
FP_07	0.388	0.607	0.678	0.544	0.788	0.623
IN_02	0.412	0.645	0.714	0.529	0.571	0.607
IN_04	0.352	0.531	0.785	0.437	0.463	0.491
IN_05	0.310	0.554	0.783	0.436	0.491	0.538
IN_06	0.263	0.535	0.809	0.373	0.502	0.579
IN_07	0.439	0.561	0.794	0.413	0.498	0.576
IN_08	0.346	0.528	0.810	0.447	0.474	0.480
IN_09	0.346	0.503	0.741	0.418	0.488	0.497
LE_01	0.367	0.428	0.347	0.661	0.336	0.421
LE_02	0.287	0.485	0.376	0.717	0.360	0.451
LE_05	0.382	0.505	0.435	0.613	0.391	0.441
LE_06	0.329	0.594	0.398	0.791	0.421	0.508
LE_07	0.235	0.427	0.296	0.651	0.337	0.432
LE_09	0.279	0.549	0.445	0.766	0.397	0.528
LE_10	0.350	0.549	0.530	0.727	0.475	0.539
LE_11	0.334	0.617	0.428	0.856	0.486	0.551
SL_04	0.221	0.488	0.343	0.479	0.412	0.618
SL_05	0.421	0.584	0.598	0.496	0.511	0.789
SL_06	0.398	0.484	0.498	0.476	0.366	0.704
SL_07	0.360	0.501	0.442	0.548	0.379	0.733
SL_08	0.323	0.540	0.536	0.459	0.379	0.753
SL_10	0.328	0.520	0.635	0.472	0.484	0.782
SL_11	0.385	0.458	0.406	0.442	0.349	0.618

Table 5.12a: T-Statistics for Outer Loadings [Refined model]

Indicators	Ambidexterity	Alliances & Networks	Performance	Innovativeness	Learning	Strategic Leadership
AM_01	30.213					
AM_02	25.990					
AM_03	27.757					
AM_04	18.034					
AM_05	34.123					
AM_06	29.652					
AM_07	25.741					
AN_01		37.686				
AN_02		15.046				
AN_03		17.260				
AN_04		15.992				
FP_01			52.569			
FP_03			21.336			
FP_04			23.317			
FP_05			19.680			
FP_06			42.667			
FP_07			33.197			
IN_02				22.948		
IN_04				33.134		
IN_05				28.606		
IN_06				35.186		
IN_07				31.895		
IN_08				28.194		
IN_09				21.083		
LE_01					15.713	
LE_02					21.110	
LE_05					13.471	
LE_06					28.439	
LE_07					14.627	
LE_09					24.981	
LE_10					16.729	
LE_11					48.893	
SL_04						14.222
SL_05						35.839
SL_06						17.626
SL_07						23.806
SL_08						27.216
SL_10						33.291
SL_11						13.585

Table 5.20: Mean, STDEV, T-Values, P-Values for Path Coefficients

[Path coefficients using 5000 Bootstrap subsamples]

Hypothesised Relationships	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Alliances & Networks -> Ambidexterity	0.145	0.145	0.041	3.520****	0.000
Alliances & Networks -> Innovativeness	0.067	0.067	0.053	1.255 ^{Nsig}	0.209
Alliances & Networks -> Learning	0.150	0.148	0.052	2.869****	0.004
Ambidexterity -> Innovativeness	0.420	0.419	0.063	6.636****	0.000
Ambidexterity -> Performance	0.247	0.245	0.071	3.466****	0.001
Innovativeness -> Performance	0.342	0.345	0.062	5.494****	0.000
Organisational Learning -> Ambidexterity	0.411	0.412	0.046	9.008****	0.000
Organisational Learning -> Performance	0.139	0.142	0.065	2.121**	0.034
Strategic Leadership -> Alliances & Networks	0.488	0.491	0.045	10.929****	0.000
Strategic Leadership -> Ambidexterity	0.368	0.368	0.048	7.664****	0.000
Strategic Leadership -> Innovativeness	0.366	0.366	0.052	7.001****	0.000
Strategic Leadership -> Organisational Learning	0.597	0.600	0.043	13.788****	0.000
Strategic Leadership -> Performance	0.069	0.068	0.069	1.001 ^{Nsig}	0.317

** p < 0.05; *** p < 0.01; ****p < 0.001; Nsig = not significant

APPENDIX E

Table 7.1: Specific Indirect Effects – Mean, STDEV, T-Values, P-Values

Hypothesised Relationship	Hypotheses	Original Sample (O)	Sample Mean (M)	Standard Error (STERR)	T Statistics ((O/STERR))	P Values	Results
Strat_Lead → Perf via Ambidexterity	H ₁₀	0.334	0.335	0.043	7.742	0.000	Supported
Strat_Lead → Perf via Learning	H ₄	0.206	0.207	0.076	2.699	0.007	Supported
Strat_Lead → Perf via Innovativeness	H ₁₄	0.333	0.333	0.042	7.992	0.000	Supported
Learning → Perf via Ambidexterity	H ₁₁	0.365	0.366	0.046	7.904	0.000	Supported
Ambidexterity → Perf via Innovativeness	H ₁₅	0.275	0.277	0.044	6.253	0.000	Supported

Calculated estimates of the specific indirect effects in the path relationships specified in the research model

Table 7.2: Confidence Intervals (Studentized)

Hypothesised Relationship	Hypotheses	Original Sample (O)	Sample Mean (M)	2.5%	97.5%	Results
Strat_Lead → Perf via Ambidexterity	H ₁₀	0.334	0.335	0.333	0.335	Supported
Strat_Lead → Perf via Learning	H ₄	0.206	0.207	0.204	0.208	Supported
Strat_Lead → Perf via Innovativeness	H ₁₄	0.333	0.333	0.331	0.334	Supported
Learning → Perf via Ambidexterity	H ₁₁	0.365	0.366	0.364	0.367	Supported
Ambidexterity → Perf via Innovativeness	H ₁₅	0.275	0.277	0.273	0.276	Supported

Calculated confidence intervals (Studentised) of mediating effects for the path relationships in the research model.

Table 7.3: Confidence Intervals Bias-Corrected (Studentized)

Hypothesised Relationship	Hypotheses	Original Sample (O)	Sample Mean (M)	Bias	2.5%	97.5%	Results
Strat_Lead → Perf via Ambidexterity	H ₁₀	0.334	0.335	0.001	0.333	0.336	Supported
Strat_Lead → Perf via Learning	H ₄	0.206	0.207	0.002	0.205	0.209	Supported
Strat_Lead → Perf via Innovativeness	H ₁₄	0.333	0.333	0.000	0.332	0.334	Supported
Learning → Perf via Ambidexterity	H ₁₁	0.365	0.366	0.001	0.365	0.368	Supported
Ambidexterity → Perf via Innovativeness	H ₁₅	0.275	0.277	0.002	0.276	0.278	Supported

Calculated confidence intervals Bias-corrected (Studentised) of mediating effects for the path relationships in the research model.

Table 7.4: Evaluation of Extent of Mediation

Hypothesised Relationship	Hypotheses	Direct Path Coef	Indirect Path Coef	Total Effect	VAF	Level of Mediation
Strat_Lead → Perf via Ambidexterity	H ₁₀	0.244	0.334	0.578	57.78%	Partial mediation
Strat_Lead → Perf via Learning	H ₄	0.375	0.206	0.581	35.41%	Partial mediation
Strat_Lead → Perf via Innovativeness	H ₁₄	0.251	0.333	0.584	57.02%	Partial mediation
Learning → Perf via Ambidexterity	H ₁₁	0.189	0.366	0.555	65.94%	Partial mediation
Ambidexterity → Perf via Innovativeness	H ₁₅	0.366	0.274	0.640	42.84%	Partial mediation

APPENDIX F

Excerpts from Semi-structured Interviews:

STRATEGIC LEADERSHIP

9.4.1.1 - Strategic Planning

Excerpts from Interviews:

'We have a rolling five year plan. We have just got to the end of the rolling five year plan and we are about to set up the next five year plan. So, yes, we set up a plan, we set up forecasts and targets and measure ourselves against those targets as we go along.' [ID: SSI-5]

'We have a short term strategy which is for the next 18 months; we have a medium term strategy which is for 5 years; and we have a long term strategy which is for 10 years. Our medium term strategy is about how big the practice is to be, the number of staff we want, the offices we would like. Our short term strategy is client reacting to the legislative changes that are coming etc. The short term strategy is reactionary, but we try to be proactive – we can see it coming and we know we have got to react. The medium term is about where we want to steer the ship, and the long term is the goal when we want to retire, so to speak.' [ID: SSI-6]

'We have some very loose plans for 5 years but it is incredibly difficult to plan for such a long period. We have a more detailed plan for 12 months (1 year) which we break down in quarters and we have just finished the first quarter and are into the second quarter of 2017.' [ID: SSI-8]

9.4.1.2 - Location of SMP

Excerpts from Interviews:

'People are often parochial and they would prefer a firm that is local, but that local firm has to provide the full range of services that they would need, otherwise they would go to Birmingham. I think it is very difficult to get into a new market as long as the people/firms of that market are providing what they [clients] need - a better service and a breadth of services. As long as we are on top of what we are offering, I do not consider firms from the bigger city (Birmingham) as a threat.' [ID: SSI-5]

'We endeavour to ensure that our services are of better quality than that of our competitors.'
[ID: SSI-2]

'We do not benchmark directly with local competitors in terms of our performance, but we certainly try and offer more than our local competitors in terms of services.' [ID: SSI-5]

9.4.1.3 - Growth-Orientation

Excerpts from Interviews:

'Recruiting well qualified staff is a problem particularly outside of the big cities. People tend to move to the big cities where the salary is big and there is a variety of jobs.' [ID: SSI-5]

'We get new work all the time but we do not actively go out to seek it just because we genuinely have got plenty to do at the moment. At our level, there is definitely enough work.'
[ID: SSI-4]

9.4.1.4 - Market Research

Excerpts from Interviews:

'Most small and medium-sized accounting firms do not seek to provide more diversified services. Thus, there is no need to be involved in market research. Again, this shows that there could be opportunities for growth in the market, opportunities that are not picked up by SMPs.' [ID: SSI-1]

'We should be doing that [market research] but we do not.' [ID: SSI-3]

9.4.1.5 - Risk Taking

Excerpts from interviews:

'We provide some consultancy services. We have got into R&D clients over the last 12 months. They are additional services to our client base, but it is not something that we actively seek.

.... We provide over and above what the typical traditional accounting firm provides. I know a lot of firms are focused on academies so that when schools turn into academies they set up

departments to niche on academies. We did not do that. We do not do charities, farmers or any agriculture, and we have no plans to change that. [ID: SSI-8]

'We help our clients to manage risks. We also take risks. We cannot help clients manage risks if we do not know how to take risks.' [ID: SSI-1]

'We have not sought to move into new areas particularly, but we just make sure that what we do offer to our client is tailored/bespoke services.' [ID: SSI-9]

9.4.1.6 - Marketing

Excerpts from Interviews:

'.... We support a Children's football team, we help sponsor a carnival organised by our local client. We are involved in soft marketing. We do stuff on social media. We employ a marketing team but it is not an aggressive marketing strategy, it is just to make people aware that we are here.' [ID: SSI-6]

'We spend about 100% of marketing budget to ensure that we are of a very high quality, and to reassure people to recommend us. We go out of our way to give them stories about what we do, in order to be able to talk to their friends and family and, therefore, recommend us. We do the box-standard stuff like website...and with some industry magazines that run some financial sections within the magazines' [ID: SSI-8]

'Our current growth rate is manageable, and a faster growth rate would require us to recruit many more staff. For a firm of our size, we feel that there is a rate of growth that is sustainable. Another aspect that influences our marketing strategy is that we feel that word of mouth referral in the industry is key. We would prefer to get a new client through referral from our existing clients ...clients that we deal with. Thus we will be able to do a better job for clients we get through referral than for clients who have not been referred to us.' [ID: SSI-9]

'Our primary focus is how to get customers, bank managers and influencers to recommend us more.' [ID: SSI-8]

'As client confidentiality is important, we keep advertising low key as we do not want to advertise the fact the firm deals with a lot of high profile personalities.' [ID: SSI-9]

'But we are not very good at going out to the marketplace and say this [legislative change] is coming, you need to do something about it and we are well placed to help you. We are not great at that.' [ID: SSI-5]

9.4.1.7 - Knowledge Requirements

Excerpts from Interviews:

'We are always looking at what we are doing and if we have got the right people to do it and it is not always possible to have the right people on board. But you hope with your training programme and the recruitment and everything else, that you are doing something in the right direction.' [ID: SSI-4]

9.4.1.8 - Growth Strategy

Excerpts from Interviews:

'Each year, we would indicate the growth rate we would like to achieve. We would sit down and plan for a growth rate of about 6% a year.' [ID: SSI-9]

'We made an acquisition almost two years ago. I'm always looking for other practices on the basis that we can have more economies of scale and we can make money out of the individual practices. However, it is very difficult to devise a strategy around that because practices are not usually sold unless the partner(s) [(owner(s))] are retiring. The strategy is to continually talk to people we know might be retiring. We also talk to bank managers and solicitors so that if they come across anybody, they would let us know.' [ID: SSI-8]

'We do try and set up good relationships with the agents of entertainers (actors, etc) that we deal with as they can be a very good source of recommendation for us. We also establish good relationship with certain private banks and other similar firms. We also set up relationships with IFAs (independent Financial Advisers) who would recommend certain types of clients to us. They know we specialise in this area and if they pick up a client in the area, they would recommend to us. In the same way, if our clients are looking for IFAs, we would also recommend to them. Also, we liaise with the agencies that recruit entertainers.' [ID: SSI-9]

'My clients are small businesses with turnover of less than £1m, and are mostly service businesses. There are few that are not service businesses. I have got some construction clients as well but I try and stay off that sector. This is because most construction clients make a mess of the CIS system and it is an added complication because I end up sorting out problems for them, over and over again.' [ID: SSI-7]

'When we take on new customers, we explain to them that it is not an obligation but it is an expectation that if they know somebody who can work with us then they would recommend us.' [ID: SSI-8]

9.4.1.9 - Client Retention

Excerpts from Interviews:

'Clients tend to stay. We do not lose many. We lose very few clients to our competitors because we believe we give a good service. We do sometimes lose out on price but we do not compete on price. When we quote, we quote the price/figure that we want, and if we get the work, we do, but if we do not get the work, that's fine but we do not want to do work for cheap.' [ID: SSI-5]

'We want to be a well-respected firm and we want to be a firm that people would want to be a client of. We are not after growth for the sake of growth. It is about offering a quality service; it is about giving clients what they want and when they want, at a reasonable price. We want to be well respected rather just growing big.' [ID: SSI-6]

9.4.2 - ALLIANCES & NETWORKS

9.4.2.1 - Learning through Alliances & Networks

Excerpts from Interviews:

'We have informal arrangements regarding alliances and networks, but there is no formal structure.' [ID: SSI-1]

'Our informal networks and alliances help us in raising awareness on issues or developments affecting the market and the profession. These alliances are often strategic, and involve other experts.' [ID: SSI-2]

'At events, you hear what is going on and what is trendy from other firms, what works, and what doesn't.' [ID: SSI-3]

'Networking is one of the good things. I network a lot within the ACCA and also with my peers, and that works very well. I get to know what is coming. I cannot know everything, so when I am out networking, I tell people stuff and they, in turn, also give me information.' [ID: SSI-6]

'We have been part of AVA, 2020 Innovation, ProBis, Peak Performance; we have just joined a group called TAG (the accountants group). We get various things from each of them. I am also part of an accountant mastermind group – they are seven (7) firms from across the country and we come together on a bi-annual basis, have something to eat, and a glass of wine, and we spend the following day talking about things that we have done well and those that we have not done so well.' [ID: SSI-8]

'The main benefit and the reason we joined [the MGI network] was to differentiate ourselves from our local competitors, to give an international offering. A lot of our business clients will, at some point, need some help overseas and we need to be well placed to be able to find that help wherever that might be.' [ID: SSI-5]

9.4.2.2 - Diversification through Alliances & Networks

Excerpts from Interviews:

'At the moment, when we have complex tax issues, we use ... in Glasgow. So if there is an opportunity to join a network/alliance we would consider it.' [ID: SSI-3]

'We also use the network in audit work, where the holding company is our client and we get a member of the network in Australia or Germany to audit a subsidiary of the firm in that location. So we can offer a more international service. But what we try to do is to offer the

same service that you would get from a mid-tier firm like BDO, but at 60% of the cost.’ [ID: SSI-5]

‘You need the network because for most of our services, we would actually go out to the MGI network and source them from there, but we batch [package] them as ourselves. This is the same as in BDO, because if you go to BDO in Birmingham and ask for tax advice, the person that deals with it will be based in London. That is what we are trying to do – to punch above our weight.’ [ID: SSI-5]

‘We do have such arrangements [informal alliances]. This tends to be around specialisms. For example: shareholder agreements that require some legal work; occasionally with some tax work – if we do not have the in-house expertise, we put out to a provider; IFA (independent financial advice) – we are not qualified to give that but I do have a firm to which that goes through ... Financial Services.’ [ID: SSI-8]

‘We have a network of firms we go to, in cases where we have not got the in-house knowledge. For instance, for financial services (financial advice) we outsource and do not provide the service in-house. If a client requires a specialist area which we have not done before (i.e. does not have the expertise), we would always take advice from specialist – we would act as an intermediary or we would let the client interact directly with the specialist, depending on the circumstances. For example: specialist VAT.’ [ID: SSI-9]

‘Also, as such alliances help broaden the scope of service provision, whereby we could refer a client to member of our informal alliance/network for a service not provided by us, client retention is enhanced.’ [ID: SSI-2]

‘I use other firms of accountants, and if they have a skill that I have not got, I will go get it from them, and vice versa.’ [ID: SSI-6]

‘The accountancy field is so deep that we cannot know everything. The large accountancy firms can afford to have a VAT specialist, a tax specialist but I cannot. Therefore, I, like the others, have to go out there and buy that specialist service when I need it, but my clients do not know anything about it and they think that I have got that specialist working for me. That is very common.’ [ID: SSI-6]

9.4.3 – LEARNING

9.4.3.1- Learning and service delivery

Excerpts from Interviews:

‘By learning, our firm is able to keep abreast with technical changes (changes in legislation), as well as changes in the wider economy.’ [ID: SSI-2]

‘Yes, we use an organisation called SWOT. They sort out our training needs and requirements.

We put in emphasis on training because it is technical and you have to keep up-to-date.’ [ID: SSI-4]

‘We take on graduates every year and put them through training (ACCA or ICAEW). It is expensive but this is key as it is important to have properly trained employees. Also, the process of obtaining the professional qualification is very good at weeding out the chaffs from your graduate intake – if people are not passing the exams, if they are not understanding what they are taught, you do not want to be putting them in front of clients.’ [ID: SSI-9]

‘There are also personal skills that need to be looked at – how well they communicate with client, how well they handle themselves on a one-to-one meeting basis. We need to make sure that our staff are well trained, and know what they are talking about when they are giving advice – it is key. If we sat people in front of untrained accountants who do not know what they are talking, it would be a disaster and would get us into a lot of trouble.’ [ID: SSI-9]

‘Training and learning are absolutely key to what we do. We do a lot of training and we are very keen on that.’ [ID: SSI-5]

9.4.3.2 - Approaches to Learning and knowledge sharing

Excerpt from Interviews:

‘Yes, we do that [continuous learning] in a number of different ways – we do in-house training on different aspects of tax; in law, we do quarterly updates on tax rules and regulations, we do annual updates on VAT and Payroll; we supplement these with other courses that we use external trainers – we would go out and do such training in certain areas.

Some of the training would be bespoke to particular partners or to particular teams. For example, colleagues who deal with solicitors would ensure that they are up-to-date with the rules relating to that sector.

We make sure we keep all of our staff up to date with their CPD.’ [ID: SSI-9]

‘There is a positive attitude towards learning in our firm, as we learn from each other. In our firm, learning is vertical and horizontal – it’s like a cobweb, that is, we learn from all directions. When we learn, we do not consider the position in the firm held by a staff as we believe that all staff should be supported in learning. We also learn from every staff.’ [ID: SSI-2]

‘We have our monthly meetings during which we share knowledge.’ [ID: SSI-3]

‘We organise in-house training and workshops during which we interact, share information and learn from each other.’ [ID: SSI-2]

‘We try and share information wherever we can to try and avoid doubling up.’ [ID: SSI-4]

‘Sharing of knowledge is one of the values and we use a software called ‘Yammer’ which is a corporate version of Facebook. This is used to share the development activities.’ [ID: SSI-8]

‘If a new client comes to us or just calls up, I would be the first person that they would speak to. I would find out a little bit about them and then it would be down to me to find out who is the best partner to take care of them, rather than just being allocated to a partner. We know the different skills in the firm and are happy to spread things around.’ [ID: SSI-9]

‘We (the partners) all have our little specialisms. If a new client has been referred by someone to a particular partner, and may be the partner is not specialised in the area, we talk among ourselves and give assistance to the client.’

‘The only information we do not share is the Practice’s account information (management accounts produced by the practice). Everything else is shared except for the practice’s account.’

9.4.3.3 - Learning and Competitive Advantage

Excerpts from Interviews:

'The training we receive does impact on the way we deliver our services and our competitive advantage, as we show that we know what we are doing.' [ID: SSI-4]

'It [learning] is fundamental. There are three (3) things that I focus on with regard to the team. It comes from a book called 'Drive' by Daniel Pink: 1) Purpose – they need to know what they are doing, why they are doing; 2) Mastery – they need to have the ability to do the job properly; 3) Autonomy – they need to have the ability to decide how the job is done. This helps them to be in charge of their own destiny. This implies that they know what they are going to do and why they are doing it, and if any help is needed in learning how to do it, then come and grab me.' [ID: SSI-8]

'We employ three apprentices who go to college. The qualified staff have to maintain CPD and we pay for that. And staff can find a course and request funding to attend. We encourage the staff to carry on learning and growing as people. The courses they attend do not necessarily need to be accountancy related courses. For example, one of the staff recently attended a course on 'how to speak with clarity,' because it would develop her as a person.' [ID: SSI-6]

'Our firm uses learning for better positioning and alignment. For example, learning helps us to improve on our pricing strategy. It also helps us identify strategies to adopt in order to maintain our client base.' [ID: SSI-2]

9.4.4 - AMBIDEXTERITY

9.4.4.1 - Exploration of new Knowledge

Excerpts from Interviews:

'We are always on the lookout for new knowledge or how we can use new technology to support and enhance our service delivery.' [ID: SSI-2]

'We have always got an eye on looking at new services but we have not got any particular offerings at the moment.' [ID: SSI-4]

'Business advisory is part and parcel of our relationship with our clients. This could range from simple advice like whether company cars could be offered to employees, to the direction of the business in terms of expansion. We would offer advice where we are qualified to do that.' [ID: SSI-9]

'I have tried a few things. For instance, I did look at Receipt Bank, which is heavily linked to Zero, and ran a trial with a couple of clients. One of them dropped out early on, and the other one just dropped out this month. It didn't prove to be as beneficial as I thought it would be.' [ID: SSI-7]

'We are at the leading edge of that [looking into new technology] – we do use Xero; before Xero we used Cash Flow; before Cash Flow, we used Liberty which was one of the first online accounting system. We were the 7th customer that Liberty ever had. We did online document management system twelve (12) years ago. We are definitely implementers and early adopters.' [ID: SSI-8]

'We are at the front of that sort of stuff, to the point that we do certain stuff that we later on think that we should not have done. We are using a software called 'Practice Advantage' and we are the second firm in the country to start using the software. Practice Advantage gives various group benefits to our clients and we are using it to also attract potential new clients.' [ID: SSI-8]

'We invest quite heavily in technology and software. We try and run the best software we can find in the marketplace and we spend about 10% of our turnover on software and IT.' [ID: SSI-6]

'We use technology to help us but I do not want us to be fully automated. Some practices are implementing full automation with cloud computing. Although they are very successful, that is not a model that I want to follow. In other words, I am embracing technology but I do not want to create a sort of call centre accountancy firm.' [ID: SSI-6]

'We are going for the integrated software that integrates accounts and tax, for example, rather than standalone software. The integrated software with the cloud would enable us work from the client up to the production of accounts and tax returns.' [ID: SSI-9]

9.4.4.2 - Exploitation of Knowledge

Excerpts from Interviews:

'To ensure that clients are satisfied with our services and/or products, we obtain customer feedback. We also monitor complaint, if any, ensuring that they are promptly and satisfactorily resolved.' [ID: SSI-2]

'I do go to client meetings; sometimes it is prompted by me and sometimes it is prompted by the clients, but it is hugely because they want to do something that is different from their current business.' [ID: SSI-7]

'Because most of our clients are owner-managed businesses, we do have a lot of one-to-one conversations and from these conversations, you tend to know the clients that are happy and those that are not happy, and you know if you have made an error because these days clients are quite quick at expressing their displeasure if they are not getting a good service. This helps to give an indication if the client is not happy.' [ID: SSI-9]

9.4.5 – INNOVATIVENESS

9.4.5.1 - Innovative Solutions to Business Problems

Excerpts from Interviews:

'My attitude in accountancy is: you the accountant should not look at what you are doing from the point of view of an accountant, but look at it from the point of view of the client, because if whatever you do is not driven by what the client wants, it is going to be a waste of time.' [ID: SSI-7]

'We are now developing a corporate finance offering and that is fairly unique for a firm of our size in our area. Yes, I suppose we try to be [innovative].' [ID: SSI-5]

'I have always taken the approach of sitting with the client and ask him to tell me all about his business so that I can understand it. When I have understood it, I would then make a proposal about the best accounting that could be done. That is not me telling them as accountant what they need, it is about what fits best with their business. That is why I do work

differently with every single client because I give them a tailored offering that fits how they want to run their business. For instance, if a client says he doesn't want me to do the payroll because he's got someone who has been doing the payroll for years, I'd say that is fine but what happens if there is a technical issue and they do not understand something? If he says he would expect me to be able to support that, I'd say that's fine, I would do that instead of doing the payroll. You have to educate the client.' [ID: SSI-7]

'Because of their size, they do not have their own finance department or a finance person from whom they can get advice. So when I meet with clients, I let them know that they can consider me as their finance/accounting department or their finance officer, and when they need that service, I can provide it.' [ID: SSI-9]

9.4.5.2 - Innovative Solutions through Alliances & Networks

Excerpts from Interviews:

'We do not quite go into the provision of new services such as Forex. However, our informal alliances and networks are useful. For example: if a client needs Forex services, we would refer them to a firm in our informal network. This is how we also benefit from such informal alliances and networks.' [ID: SSI-1]

'I have got a spreadsheet which I developed last year which feeds some of the data out of Tax File and Liberty, and give clients a tax planning report. This could not be directly done on Tax Filer. I print the spreadsheet and send clients a PDF extract which explains to them what their planned corporation tax is, planned self-assessment, and recommends dividends at year end which I ask them to approve. It also explains the tax implications and what they are going to be paying in corporation tax in July 2017, December 2017, and in Jan 2018 for Self-assessment. I would also indicate the figures as note in Liberty so that when clients log in, they could see the figures, so they got a timeline of what is coming up.' [ID: SSI-7]

9.4.5.3 - Process Innovativeness

Excerpts from Interviews:

'We use online meeting systems, so you do not have to travel to the client or the client doesn't need to travel to our offices. We can have the meeting over the internet. We use remote services – we use an IP telephone system when enables people to work from home just like

they do in the office. For example, even though you rang the office number, the call was transferred to my mobile at no cost to the business nor to yourself which means I can be anywhere and receive calls relating to the business. Thus we are early adopters of technology, and we use it extensively to improve our service delivery to clients. There are certain things that we would not be able to do without technology. We use practice manager and where we cannot use practice manager, we use RS. [ID: SSI-8]

'All of my clients use Liberty Accounts which is a cloud system.' [ID: SSI-7]

'These types of [accountancy] services have not changed over the last twenty years although how they are delivered has changed – use of a lot more software and cloud accounting in delivering services.' [ID: SSI-9]

9.4.5.4 - Marketing of new Services/Products

Excerpts from Interviews:

'We market new services and products through our website, and through relationship with our clients.' [ID: SSI-1]

'It will be very personal type marketing. We do not intend to use the media. It would be very personal. For example, the person developing it will identify who he needs to see and then go and meet them.' [ID: SSI-5]

9.4.5.5 - Innovativeness and SMP Performance

Excerpts from Interviews:

'Changes to our services and products have been significant. This is not only to enable adaptation to the environment, but also to propel and put us up against competitors and potential competitors.' [ID: SSI-2]

'There is a positive relationship between our innovativeness and our performance.' [ID: SSI-2]

'They [our new service offerings] have been perceived positively. Generally, our clients are very positive about seeing that we are capable of introducing new services. I think they like to

feel that they are with a firm that is able to offer such services, whether they use them or not.’
[ID: SSI-5]

9.4.6 - MARKET TURBULENCE

9.4.6.1 - Competition from Similar-Size SMPs

Excerpts from Interviews:

‘We are a two partner firm with ten staff, and neither competing with the medium-size accountancy firms nor with sole practitioners. I believe we offer a unique product and I am not bothered by competition in providing accountancy services in this location.’ [ID: SSI-6]

‘Because there are lot of firms out there, there is plenty of alternatives for clients who are not happy with their accountants. Also, the big 4 firms are taking advantage and now trying to offer services to clients that smaller accountancy firms would have traditionally gone for. There is evidence that they are trying to shift from the big PLCs and MNCs that would be their sort of main clients, and are trying to extend into the smaller owner-managed business sector a lot more and at a much lower turnover level. If anything, the competition has got tougher in the industry.’ [ID: SSI-9]

‘We find the business environment pretty good. We have found ourselves quite well positioned over the past ten years, I suppose, in the services we provide. For us, we find that we are busy, there is plenty of work out there. From the perspective of our clients, they find it quite challenging and there is a lot of uncertainty. But the uncertainty does not affect the services that we provide to the clients.’ [ID: SSI-5]

‘I think it is that most people do not change accountants unless they are really unhappy about something their accountant has done – there might be clash of personalities; they might have been told of a, say, £10,000 tax bill the day before when they believe that they should have been told way in advance. There is usually one reason why someone is looking for another accountant. Most of my clients are people who started up in business and were

recommended by somebody else. I have not taken a lot of clients from other firms of accountants.’ [ID: SSI-7]

9.4.6.2 - Competition from the Big 4 and mid-tier Accountancy Firms

Excerpts from Interviews:

‘In the market in which we operate, we do not really compete with the big firms (or they do not compete with us, to put it the other way). The big firms are not a concern to a practice of our size because they are fishing in a very different pond to us. We do not compete with them.’ [ID: SSI-4]

‘I work with other accountants in my consultancy business. Many accountants talk about prospectus for small businesses put out there by KPMG. However, none of the accountants I talk to have lost any client to KPMG. Even though KPMG might be quoting a headline monthly fee that is less than we charge clients, it is quick to realise that their actual monthly charge will be more than twice what we charge. They are trying to attract clients based on price, but they are not cheaper. Therefore, I do not consider them to be a threat.’ [ID: SSI-8]

‘Also, the majority of businesses that work with accountants are very apathetic to changing their professional advisers. KPMG (and the big firms) need to convince my client that they are better than me although there is no point of reference against which to compare. I don’t also think that KPMG and the big firms can provide a better service. I speak to about 30 accountants in the course of a month, and I do not know of any that has lost a client to KPMG.’ [ID: SSI-8]

‘No, what’s happening in the market is that there is a trend for small businesses to move towards the SMPs because of the need of partner attention. My partner goes to dinner and other events with other accountants and what’s been seen is that partner attention is needed. However, this requires plenty of time.’ [ID: SSI-3]

‘The big 4 firms cannot provide partners / directors/ or even decent managers’ attention to the SMEs. The fees for our typical clients are too small for the big 4 firms. We are winning work off BDO in this area, on price because people are getting poor service and paying a lot of money for it.’

9.4.6.3 - Competition from Unqualified and/or Unregistered Accountants

Excerpts from Interviews:

'We do experience that [competition from unqualified/unregistered accountants], and there is a frustration that anybody can call themselves an accountant and start doing work. It is a shame that it is unregulated. All we can do is make sure that we tell people the benefits of going to a qualified accountant. It is worth noting that competition from unqualified accountants is at the smaller end of our clients, in terms of fees. The business we lose out in this area is not significant and it is not something that we are concerned about, but it is frustrating.' [ID: SSI-5]

'There is a lot of competition from unqualified accountants, from the smaller end of the market. There are two things – they don't charge the real fees (they under charge). But I would like to think that our commercial input makes it worthwhile for people/firms to come to us because we offer more than a compliance function – plus level of service; plus computerisation; plus the fact that somebody always answers the phone and so on.' [ID: SSI-3]

'We do not address the issue of competition from unqualified accountants because we have got other things to do. What we do is to maintain / improve on the quality of our services to clients - this helps with client retention.' [ID: SSI-3]

'They do add to the competition. They are not regulated. We do market ourselves. We are regulated by the ACCA and we do promote that as a positive. We use this to indicate that regulation enables us to offer a better service than the unqualified accountants.' [ID: SSI-6]

'I do not see a lot [of competition] from the unqualified accountants. We tend to pick up clients that have been with the unqualified accountant but have been caught out by HMRC inspection or have not just been particularly happy with the service of the unqualified accountant. We do not lose clients to unqualified accountants.' [ID: SSI-9]

'If we were to lose clients to another accountant, it would be to the same level of competitor. We specialise in certain industries. Certainly Media and Entertainment is a very big market for us. There are a certain number of firms in our location/area (in London) that we compete with for those sorts of clients.' [ID: SSI-9]

9.4.7 - SIZE of SMP

Excerpts from Interviews:

'Yes, there is a problem of size because the resources are not just there. Depending on what you want to do, it can be very expensive. At the end of the day, we are a partnership and if I spend money on marketing, it is profit that I do not have. So a fine balance needs to be adopted.' [ID: SSI-4]

'Yes [we would like to expand], but we'd need to recruit enough staff. However, you'll probably recruit three (3) members of staff to get one (1). This is common in the industry.' [ID: SSI-3]

'Yes, it [size] probably does because we are limited by the resources that we have got.' [ID: SSI-4]

'The size of our firm is a current limitation [to our growth]. We have a limitation with regards to the size of our office, considering the number of people sitting in it. This is our main limitation. If we were to get much bigger, we would start losing some of the personal service aspects, and certainly the relationships within the firm would become more difficult. This means we would have to departmentalise the business a lot more. We have a very personal relationship with our clients which is easy to maintain in a small firm.' [ID: SSI-9]

'One reason that our clients like us is that they get to speak to the partner that looks after them when they phone up, or may be a very regular senior manager – the same person that they are with year in, year out, and have built up that relationship. I think if they were to phone a department and speak to one of a thousand people at any one time, it would be more difficult in terms of the way we sell ourselves. For example, I know my clients inside out, and I have meetings with them once a year when I prepare their tax returns. This would become difficult if you have more people involved in the process. Therefore, it would be a challenge to maintain such a relationship as the firm grows larger.' [ID: SSI-9]

'We are getting to go a size where we need to stop growing because we cannot manage it. The aim is not just to grow big, and we are getting to a size that offers me the lifestyle that I want

without too much stress. We do not just want to have the biggest accountancy firm that we possibly can. [ID: SSI-6]

'We had a significant acquisition last year but at the moment I do not think we are looking to doing it again. Now we are trying to ensure that what we acquired works out well before we can consider increasing or doubling the size of the firm again.' [ID: SSI-4]

9.4.8 - AGE of SMP

Quality of Clients

Excerpts from Interviews:

'We just get better quality clients. When someone starts as a practitioner, you take anybody because you need the growth, the sales, the numbers; but you get to our size, you do not just take anybody. We have been sent clients that we are not just interested in. We are now picky about the type of clients we want and not all clients can afford our fees. Because of our infrastructure, we have to charge a certain fee.' [ID: SSI-6]

'When the firm was young you could just accept clients, even if they were problematic, just before you wanted to stay in business. Having lived through that and experienced it, I would probably discourage it because it is a decision and just a decision.' [ID: SSI-8]

'Yes, I think so. From a client point of view, I suppose we have got a track record as we have been around for a long time. The length of existence of our firm does allow us to be choosy in the type of clients we take on. If we feel that someone is not a good fit for us, we would tell them, but if they still want to do business with us, we would take them on. The length of our existence and the fact that we are specialist in the sector give clients the confidence.' [ID: SSI-9]

9.5 - SMP PERFORMANCE

Cost Reduction

Excerpts from Interviews:

'It is difficult to achieve actual reduction in costs because the main cost in accountancy firms is staff cost. These costs only tend to increase on a year to year basis.' [ID: SSI-1]

'In the short term, it is not possible to make significant savings while diversifying and improving the quality of services/products we provide.' [ID: SSI-2]

'No, we can't make savings because we operate a very lean structure.' [ID: SSI-3]

'You can improve on your services but the cost does not reduce because the main component of cost is human capital. If you want to employ and keep good staff in your business, you can't

'It is only to an extent that staff costs could be driven down. This also depends on the mix of work. The idea is to drive away the work that requires a huge amount of time and create losses.' [ID: SSI-5]

'We try and be efficient in what we do but cost will never go down. My biggest cost is salary. Staff cost is increasing. I cannot pay staff above the market rate but can only pay them within my business model. We look at all other costs and where we need to cut down, we do so.' [ID: SSI-6]

'I would agree the main cost is human capital which does not decrease especially if you have to maintain high quality staff. Although we improve on efficiency and in delivering a better service, the actual cost of delivering such services does not reduce.' [ID: SSI-8]

'Yes, our biggest overhead is staff cost. Unless you got sufficient staff, you cannot service your clients. Maintaining and growing our staff, and making sure that they are adequately trained is our biggest overhead. There is only so many hours that an individual can work in a week and, therefore, if your business is growing, you have to bring on new people. There is only a number of clients that an individual can manage and still give that type of personal attention. I have never known staff cost to go down – you are paying to train staff and that training has been upward ever since I have been in the profession.' [ID: SSI-9]

Client Satisfaction and Client Loyalty

Excerpts from Interviews:

'Client satisfaction and client loyalty are key to success. Thus, we give them key consideration. We constantly evaluate clients' appraisal of our services. For example: we make sure we regularly obtain client feedback, both formal and informal.' [ID: SSI-2]

'We do consider our client satisfaction to be very important. We do not tend to lose clients. For example, some clients we are working with are the third or fourth generation.' [ID: SSI-3]

'The feedback from the questionnaire we send to clients will also tell us if clients are satisfied.' [ID: SSI-4]

'We have not done any surveys, but keeping clients happy is important and is the core of our business but we do not measure it in any way.' [ID: SSI-5]

'We are not sophisticated enough when it comes to client satisfaction. It is not something that we measure. So I suppose if they are not happy we do not know. But I think assessing client satisfaction is something we should do.' [ID: SSI-5]

'We do not send out satisfaction surveys to our clients. When we have meetings with our clients, we discuss if there are any issues that the client is not happy about. We hope that clients would always raise issues with us, if there are, via email or in the meeting.' [ID: SSI-9]

'At the end of the year, we assume that we have delivered a good service (done a good job) and try to build/improve on that, and hope that the clients would stay with us. However, I do meet with clients at least once a year. I could meet with the bigger clients more often, but for the self-employed, I would meet with them once but if that is not possible, I would have to discuss with them on the phone.' [ID: SSI-9]

APPENDIX G:

INITIAL MODEL VALIDATION

A.1 Initial Research Model Evaluation

These model parameters are shown in figure A1.

Figure A1: Results of Path Coefficients Estimates for initial Research Model

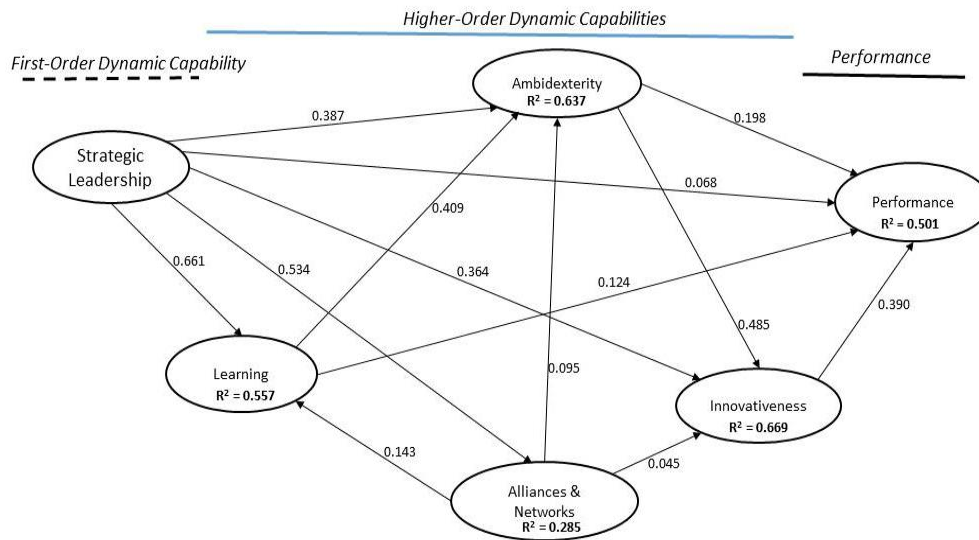


Figure A1: Results of path coefficients estimates for initial research model

The parameters estimated for the base model and shown in Figure A1 above have been analysed and evaluated in the following sections and subsections:

A.1.1 Evaluation of the Measurement Model

A1.1.1 Indicator Reliability

Table A1: Indicator Reliability and Validity - Initial Model

Latent Constructs	Indicators	Loadings	Indicator Reliability [loadings ²]	Composite Reliability	Average Variance Extracted [AVE]	AVE ²
Ambidexterity	AM_01	0.769	0.591	0.905	0.577	0.333
	AM_02	0.749	0.561			
	AM_03	0.739	0.546			
	AM_04	0.680	0.463			
	AM_05	0.812	0.660			
	AM_06	0.789	0.623			
	AM_07	0.774	0.599			
Alliances & Networks	AN_01	0.821	0.674	0.834	0.557	0.310
	AN_02	0.682	0.465			
	AN_03	0.728	0.531			
	AN_04	0.747	0.558			
SMP Performance	FP_01	0.859	0.737	0.875	0.526	0.277
	FP_02	0.138	0.019			
	FP_03	0.749	0.562			
	FP_04	0.738	0.544			
	FP_05	0.706	0.499			
	FP_06	0.841	0.707			
	FP_07	0.785	0.616			
Innovativeness	IN_01	0.701	0.491	0.915	0.547	0.299
	IN_02	0.762	0.580			
	IN_03	0.647	0.419			
	IN_04	0.760	0.578			
	IN_05	0.765	0.585			
	IN_06	0.759	0.576			
	IN_07	0.765	0.586			
	IN_08	0.773	0.597			
	IN_09	0.714	0.510			
Organisational Learning	LE_01	0.628	0.394	0.906	0.468	0.219
	LE_02	0.690	0.476			
	LE_03	0.640	0.409			
	LE_04	0.647	0.419			
	LE_05	0.664	0.441			
	LE_06	0.769	0.591			
	LE_07	0.672	0.451			
	LE_08	0.543	0.295			
	LE_09	0.728	0.530			
	LE_10	0.688	0.474			

Latent Constructs	Indicators	Loadings	Indicator Reliability [loadings ²]	Composite Reliability	Average Variance Extracted [AVE]	AVE ²
	LE_11	0.818	0.669			
Strategic Leadership	SL_01	0.573	0.328	0.888	0.384	0.148
	SL_02	0.468	0.219			
	SL_03	0.472	0.223			
	SL_04	0.621	0.386			
	SL_05	0.749	0.561			
	SL_06	0.663	0.440			
	SL_07	0.684	0.467			
	SL_08	0.691	0.478			
	SL_09	0.622	0.386			
	SL_10	0.748	0.560			
	SL_11	0.643	0.414			
	SL_12	0.443	0.197			
	SL_13	0.581	0.337			

Table A1.0

As shown in Table A1, the indicator reliability values for a number of indicators did not meet the minimum threshold of acceptance, using both the absolute standardised loadings (Hair, Ringle, and Sarstedt 2011) and the square of the loadings (Wong 2013). Therefore, indicators with absolute value < 0.4 were removed from the scale. In line with Hair, Ringle, and Sarstedt (2011), indicators with loadings of < 0.4 were eliminated. Also, following Hair et al. (2014), indicators with loadings > 0.4 but < 0.7 were analysed to see if deletion would improve average variance extracted (AVE), Composite Reliability and Fornell-Larcker criterion (for discriminant validity).

A1.1.2 Internal Consistency Reliability (Construct Reliability)

Composite reliability values for the latent constructs in this research are as follows: alliance & networks = 0.834, ambidexterity = 0.905, innovativeness = 0.915, learning = 0.906, performance = 0.875, and strategic leadership = 0.888. As composite reliability value for each construct is larger than 0.8, a high level of internal consistency reliability among all (reflective) latent constructs is demonstrated. Composite reliability values from 0.7 to 0.9 are regarded as satisfactory in more advanced stages of research (Nunnally and Bernstein 1994). The composite reliability values are shown in Table A2.

A1.1.3 Construct Validity

A.1.1.3.1 Convergent Validity

Evaluation of the AVE values shows two of the latent constructs (Strategic Leadership and Learning) with AVE values less than the acceptable threshold of 0.5. Therefore, convergent validity was not satisfied for all latent constructs. These values are shown in the Table A2.

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Alliances & Networks	0.743	0.794	0.834	0.557
Ambidexterity	0.878	0.880	0.905	0.577
Innovativeness	0.896	0.897	0.915	0.547
Learning	0.885	0.891	0.906	0.468
Performance	0.826	0.886	0.875	0.526
Strategic Leadership	0.863	0.874	0.888	0.384

Table A2: Construct Reliability and Validity

A.1.1.3.2 Discriminant validity

Fornell-Larcker criterion (1981)

In this study, the square root of AVE for the latent construct Alliances & Networks' is 0.746 (AVE = 0.557), larger than its correlations with the other latent constructs. The square root of AVE for the latent construct SMP Performance is 0.725 (AVE = 0.526), larger than its correlation with all other latent constructs. The square root of AVEs for the other latent constructs: ambidexterity = 0.760 (AVE = 0.577), innovativeness = 0.739 (AVE = 0.547), learning = 0.684 (AVE = 0.468), and strategic leadership = 0.620 (AVE = 0.384) - values that are less than the correlations among the other latent constructs.

Discriminant validity has been well established for the latent construct: alliances & networks, and performance; however, it has not been established for all other latent variables. These values are shown in Table A3 below.

	A_NET	AM_BI	IN_NO	OG_LE	PE_RF	SL_ED
A_NET	0.746					
AM_BI	0.504	0.760				
IN_NO	0.484	0.776	0.739			
OG_LE	0.495	0.741	0.648	0.684		
PE_RF	0.366	0.642	0.674	0.573	0.725	
SL_ED	0.534	0.739	0.746	0.737	0.596	0.620

Table A3: Fornell-Larcker criterion (1981)

Table A3 above shows the square root of each latent construct's AVE (in bold in the diagonal), and its correlation with other latent variables.

As shown in Table A3 above, the failure to satisfy the Fornell-Larcker criterion (1981), implies that discriminant validity has not been established. As such, the other two methods (indicator cross-loading and HTMT ratio) are not assessed at this point. Therefore the model is refined, followed by reassessment of indicator reliability, internal consistency and construct validity.

The revaluation of the measurement model of the refined base model is covered in the subsequent sections:

A2 Model Refinement

As indicated earlier, convergent validity (AVE) was not confirmed for two latent constructs (Learning, and Strategic Leadership), and discriminant validity was not confirmed for 4 (four) latent constructs (Ambidexterity, Innovativeness, Learning, and Strategic Leadership). In order to improve convergent validity and discriminant validity the following measures were taken:

In line with Hair, Ringle, and Sarstedt (2011), indicators with loadings < 0.4 were eliminated. They are SL_02, SL_03, SL_12, FP_02. Also, following Hair et al. (2014), indicators with loadings > 0.4 but < 0.7 were analysed to see if deletion would improve AVE, Composite Reliability and discriminant validity. Thus, indicators (SL_01, SL_13) with loadings < 0.6 were further removed from the scale. Then, a number of indicators (SL_09, LE_03, LE_04, LE_08, IN_01, IN_03) with loadings > 0.6 but < 0.7 were removed, on the basis that their removal did not impact on content validity. Since removing inconsistent and unreliable items (indicators) to improve consistency or reliability can either improve or degrade AVE, as well as undermine content validity, a trade-off among content validity, consistency/unidimensionality, reliability and AVE in finalising the itemisation of measures is required (Ping 2004). It is important to note that all the latent constructs had multiple indicators, and were still left with multiple indicators after the removal of the indicators with low loadings indicated above. See Figure 5.2 (in Chapter 5).

APPENDIX H:

A3 SMP AGE AS A CONTROL VARIABLE

The aggregate model used in assessing SMP age as a moderating variable is composed of three sub-models (groups): Age-Group-1 (≤ 10 years), $n = 81$; Age-Group-2 (11 - 20 years), $n = 61$; Age-Group-3 (> 20 years), $n = 173$. Each age-group was made up of SMPs of different sizes, that is, micro, small and medium-sized SMPs. The three SMP age groups make up the complete data set used earlier in this study, to test the hypotheses. However, because of the small sample size of SMP Age-Group-2 ($n = 61$) and the low statistical power that could result from analysing it, a SEM analysis was not performed for this group of SMPs. Therefore, only SMP age-groups 1 and 3 have been analysed (i.e. $N = 254$).

The measurement model analysis has been performed in line with Hair et al. (2014), Henseler, Ringle, and Sinkovics (2009), Chin (1998), and Nunnally and Bernstein (1994), and exhibit satisfactory loadings for all indicators.

A3.1 Evaluation of Initial Measurement and Structural Model quality [Initial Model]

The research model has been validated. See Figure 5.2 and tables 5.8, 5.9, 5.10, and 5.11 (in chapter 5).

The Initial Age-Group-1 sub-model

After running the research model on an Age-Group basis, using SmartPLS, the following results for model quality were obtained: Two indicators in Age-Group-1 had loadings < 0.5 (SL_11 = 0.447; AN_04 = 0.409). Although composite reliability values were > 0.7 , the AVE for three latent constructs were < 0.5 (alliances & Networks = 0.499; Learning = 0.489; Strategic leadership = 0.437). Therefore, internal consistency reliability was not met. See Table A4.

Table A4: Construct Reliability for initial SMP-Age-Group-1

	No of Items	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Alliances & Networks	4	0.738	0.702	0.790	0.499
Ambidexterity	7	0.872	0.886	0.902	0.571
Innovativeness	7	0.857	0.864	0.891	0.541
Learning	8	0.844	0.858	0.882	0.489
Performance	6	0.861	0.870	0.896	0.592
Strategic Leadership	7	0.776	0.796	0.840	0.437

Initial Age-Group-1 sub-model

The Fornell-Larcker criterion (1981) was not met for two latent constructs – learning and strategic leadership - as the square root of the AVE of each (of the two latent constructs) was not larger than their latent variable correlation. Therefore, discriminant validity was not established for the sub-model relating to Age-Group-1. See Table A5.

Table A5: Fornell-Larcker criterion (1981) for initial SMP-Age-Group-1

	A_NET	AM_BI	IN_NO	OG_LE	PE_RF	SL_ED
Alliances & Networks	0.707					
Ambidexterity	0.428	0.756				
Innovativeness	0.414	0.647	0.736			
Learning	0.469	0.709	0.558	0.699		
Performance	0.236	0.618	0.597	0.596	0.769	
Strategic Leadership	0.478	0.652	0.750	0.627	0.635	0.661

Initial Age-Group-1 sub-model

The Initial Age-Group-3 sub-model

For Age-Group-3, all indicator loadings were > 0.6, composite reliability values > 0.8, and AVE values > 0.5 for all latent constructs. Thus internal consistency reliability was

satisfactory for latent constructs in Age-Group-3. The Fornell-Larcker criterion (1981) was not met for the latent construct – strategic leadership - as the square root of its AVE was not larger than its correlation with the other latent variables. This implies that discriminant validity was not met in respect of the sub-model relating to Age-Group-3.

See Table A6 and Table A7.

Table A6: Construct Reliability for initial SMP-Age-Group-3

	No of Items	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Alliances & Networks	4	0.740	0.787	0.834	0.558
Ambidexterity	7	0.887	0.890	0.911	0.596
Innovativeness	7	0.892	0.893	0.916	0.609
Learning	8	0.892	0.899	0.915	0.575
Performance	6	0.879	0.901	0.907	0.621
Strategic Leadership	7	0.877	0.882	0.906	0.580

Initial Age-Group-3 sub-model

Table A7: Fornell-Larcker criterion (1981) for initial SMP-Age-Group-3

	A_NET	AM_BI	IN_NO	OG_LE	PE_RF	SL_ED
Alliances & Networks	0.747					
Ambidexterity	0.568	0.772				
Innovativeness	0.517	0.758	0.781			
Learning	0.499	0.745	0.615	0.758		
Performance	0.485	0.622	0.640	0.543	0.788	
Strategic Leadership	0.558	0.763	0.710	0.699	0.561	0.762

Initial Age-Group-3 sub-model

A3.2 Assessment of the refined Age-Group Measurement and Structural Model quality

Because internal consistency reliability and discriminant validity were not satisfied for the Age-Group-1 sub-model, and discriminant validity was not be met for Age-Group-3 sub-model, a number of indicators with loadings < 0.6 were removed from the aggregate model. The improved model is shown in Figure A2 below, followed by the assessment of the quality criteria of the resulting improved model.

Figure A2: Results of Path Coefficients Estimates for refined SMPs Age-Groups - Aggregate Model

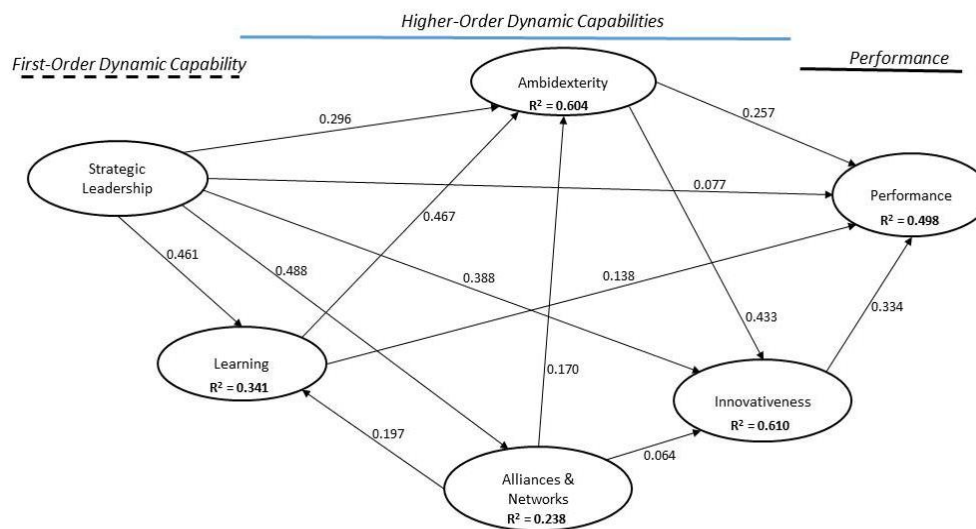


Figure A2: Results of path coefficients estimates for refined SMPs Age-groups model

The SMP Age-Group Aggregate Model (Refined):

The loadings for indicators were larger than 0.7, and although three (3) indicators had loadings > 0.6 but < 0.7 (AM_04 = 0.680, LE_07 = 0.672, and AN_03 = 0.682), the indicator loadings were deemed satisfactory. Hair et al. (2014) posit that indicators with loadings > 0.4 but < 0.7 should only be removed from a model if such removal improves the quality criteria of the model. The composite reliability values were all > 0.8 , all AVE values > 0.5 , and the square root of the AVE for each latent construct was larger than the correlation with other latent constructs. Therefore, indicator reliability, convergent validity, internal consistency reliability and discriminant validity (Fornell-Larcker criterion (1981)) were also met for the improved aggregate model. See table A8 and table A9.

Table A8: Construct Reliability for refined SMP-Age Aggregate Model

	No of Items	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Alliances & Networks	3	0.646	0.724	0.803	0.579
Ambidexterity	7	0.878	0.881	0.905	0.577
Innovativeness	7	0.890	0.891	0.914	0.604
Learning	6	0.860	0.869	0.896	0.591
Performance	6	0.873	0.892	0.904	0.612
Strategic Leadership	3	0.777	0.785	0.871	0.692

Refined Aggregate Model – All SMP Age Groups

Table A9: Fornell-Larcker criterion (1981) for refined SMP-Age Aggregate Model

	A_NET	AM_BI	IN_NO	OG_LE	PE_RF	SL_ED
Alliances & Networks	0.761					
Ambidexterity	0.511	0.760				
Innovativeness	0.475	0.714	0.777			
Learning	0.422	0.703	0.541	0.769		
Performance	0.379	0.642	0.646	0.542	0.782	
Strategic Leadership	0.488	0.639	0.696	0.558	0.551	0.832

Refined Aggregate Model – All SMP Age Groups

The Age-Group-1 sub-model (Refined):

For the Age-Group-1 sub-model, all indicators had loadings were satisfactory - with the exception of 1 indicator with loading < 0.6 (i.e. AM_04 = 0.597), and 5 indicators with loadings > 0.6 but < 0.7, indicator loadings > 0.7. The composite reliability values were > 0.8, and AVE values > 0.5, and each indicator's loading to its latent variable was higher than its loading to other constructs, indicating satisfactory indicator cross-loadings. The Fornell-Larcker criterion (1981) was satisfied as the square root of the AVE for each latent construct was larger than the correlation with other latent constructs. In addition the HTMT ratio was < 0.85 for each construct. With these results, indicator reliability, convergent validity, internal

consistency reliability, and discriminant validity were confirmed for the Age-Group-1 sub-model. See Tables A10 and A11.

Table A10: Construct Reliability for refined SMP-Age-Group-1

	No of Items	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Alliances & Networks	3	0.698	0.775	0.825	0.613
Ambidexterity	7	0.872	0.886	0.902	0.571
Innovativeness	7	0.857	0.864	0.891	0.542
Learning	6	0.857	0.866	0.894	0.588
Performance	6	0.861	0.870	0.896	0.592
Strategic Leadership	3	0.823	0.825	0.894	0.739

Table A11: Fornell-Larcker criterion (1981) for refined SMP-Age-Group-1

	A_NET	AM_BI	IN_NO	OG_LE	PE_RF	SL_ED
Alliances & Networks	0.783					
Ambidexterity	0.418	0.756				
Innovativeness	0.399	0.645	0.736			
Learning	0.426	0.687	0.540	0.767		
Performance	0.218	0.618	0.596	0.568	0.769	
Strategic Leadership	0.436	0.505	0.722	0.454	0.572	0.859

The Age-Group-3 sub-model (Refined):

In the Age-Group-3 sub-model, with the exception of 4 indicators with loadings > 0.6 but < 0.7 [AN_03 = 0.663, LE_07 = 0.695, IN_02 = 0.699, FP_05 = 0.688], indicator loadings were larger than 0.7. Thus indicator loadings for all indicators were satisfactory. Composite reliability values for all constructs were > 0.8 (with Alliances & Networks = 0.797); AVE values were > 0.5; the square root of the AVE for each latent construct was larger than the correlation with other latent constructs – the Fornell-Larcker criterion (1981); and the loading of each indicator to its latent variable was higher than its loading to other constructs.

Therefore, indicator reliability, convergent validity, internal consistency reliability and discriminant validity were satisfied for the Age-Group-3 sub-model. See tables A12 and A13.

Table A12: Construct Reliability for refined SMP-Age-Group-3

	No of Items	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Alliances & Networks	3	0.629	0.710	0.797	0.571
Ambidexterity	7	0.887	0.890	0.911	0.595
Innovativeness	7	0.892	0.893	0.916	0.609
Learning	6	0.885	0.893	0.913	0.638
Performance	6	0.879	0.902	0.907	0.621
Strat_Leader	3	0.803	0.812	0.884	0.718

Table A13: Fornell-Larcker criterion (1981) for refined SMP-Age-Group-3

	A_NET	AM_BI	IN_NO	OG_LE	PE_RF	SL_ED
Alliances & Networks	0.756					
Ambidexterity	0.571	0.772				
Innovativeness	0.534	0.758	0.781			
Learning	0.468	0.731	0.572	0.799		
Performance	0.484	0.622	0.640	0.522	0.788	
Strat_Leader	0.536	0.714	0.696	0.611	0.545	0.847

APPENDIX I

A4 SMP SIZE AS CONTROL VARIABLE

A4.1 Assessment of Initial Measurement and Structural Model quality [SMP Size]

The quality criteria of the initial aggregate model have been evaluated in Figure 5.2, in Chapter 5.

The Initial SMPs Model by Size-Groups - Size-Group-1 & Size-Group-2 sub-models

For the Size-Group-1 sub-model, indicators had loadings > 0.7 .¹³⁶ The composite reliability values were > 0.8 , and one latent construct – strategic leadership – had an AVE value of 0.491 which is less than the required threshold of 0.5. Thus convergent validity was satisfactory; however, internal consistency reliability was satisfied for the model of SMPs Size-Group-1. See Table A14.

Table A14: Construct Reliability for initial Size-Group-1

	No of Items	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Alliances & Networks	4	0.752	0.811	0.838	0.565
Ambidexterity	7	0.870	0.873	0.900	0.563
Innovativeness	7	0.886	0.889	0.911	0.595
Learning	8	0.867	0.878	0.896	0.523
Performance	6	0.877	0.896	0.906	0.618
Strategic Leadership	7	0.824	0.832	0.870	0.491

Initial Size-Group-1 sub-model

For the Size-Group-2 sub-model, the loadings were > 0.7 for thirty (30) indicators, five (5) indicators with loadings > 0.6 but < 0.7 ; three (3) indicators had loadings > 0.5 but < 0.6 and; one (1) indicator had loading > 0.4 but < 0.5 . Although the composite reliability values were > 0.8 , the AVE value (AVE = 0.486) for the latent construct – alliances & networks – was below the recommended threshold of 0.5. Therefore, while convergent validity was satisfactory, the indicator reliability and internal consistency reliability were not satisfactory for the SMPs Size-Group-2 sub-model. See Table A15.

¹³⁶ This is with exception of 7 indicators with loadings > 0.6 but < 0.7 , and one indicator with loading > 0.5 but < 0.6 .

Table A15: Construct Reliability for initial Size-Group-2

	No of Items	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Alliances & Networks	4	0.653	0.709	0.787	0.486
Ambidexterity	7	0.876	0.884	0.904	0.574
Innovativeness	7	0.866	0.866	0.897	0.555
Learning	8	0.873	0.880	0.901	0.535
Performance	6	0.859	0.864	0.895	0.588
Strategic Leadership	7	0.832	0.847	0.876	0.508

Initial Size-Group-2 sub-model

A4.2 Evaluation of Refined Measurement and Structural Model quality – SMPs Size-Groups

To improve the indicator reliability, internal consistency reliability, and convergent validity for the SMPs Size-Group-1 and Size-Group-2 sub-models, a number of indicators with loadings < 0.6 were removed from the aggregate model. The path estimates for the refined model are shown in Figure A3, and the quality criteria for the refined model are evaluated thereafter:

Figure A3: Results of Path Coefficients Estimates for SMPs Size-Groups – Refined Aggregate Model

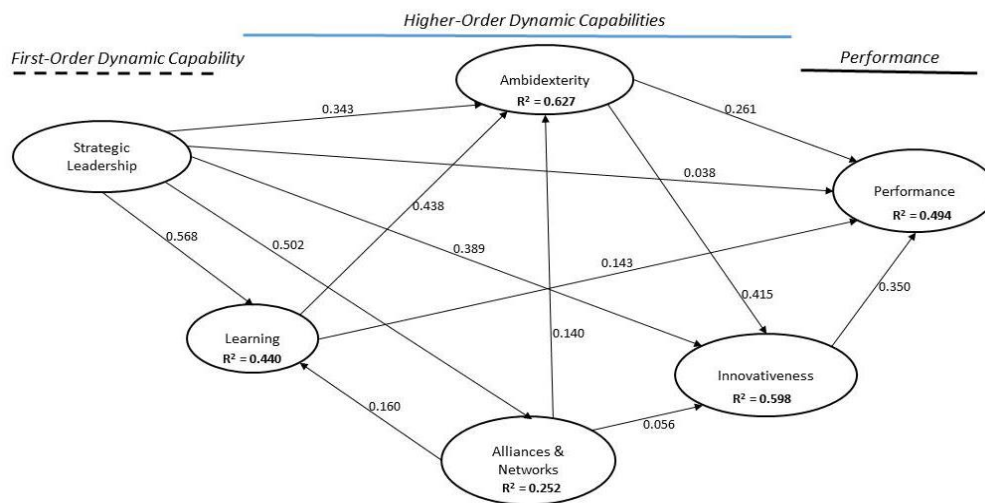


Figure A3: Results of path coefficients estimates for refined SMP Size-groups model

In figure 8.3 above, the parameter estimates for the path coefficients and explained variance (R^2) for the endogenous DCs constructs and dependent variable are shown.

The SMP Size-Group Aggregate Model (Refined):

The loadings for indicators were higher than 0.7 (except for the following four (4) indicators with loadings larger than 0.6 but less than 0.7: SL_11 = 0.628; LE_01 = 0.679; LE_05 = 0.618; AM_04 = 0.681). These indicator loadings were satisfactory. The composite reliability values were larger than 0.8, AVE values were larger than 0.5 and the loading of each indicator to its latent variable was higher than its loading to other constructs. The Fornell-Larcker criterion (1981) was satisfied as the square root of AVE of each latent construct in the model was larger than the latent variable correlation. Thus, the indicator reliability, internal consistency reliability and discriminant validity were satisfactory for the refined aggregate model. See table A16 and table A17.

Table A16: Construct Reliability for refined SMP-size Aggregate Model

	No of Items	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Alliances & Networks	3	0.718	0.777	0.832	0.623
Ambidexterity	7	0.878	0.881	0.905	0.577
Innovativeness	7	0.890	0.891	0.914	0.604
Learning	7	0.862	0.868	0.895	0.551
Performance	6	0.873	0.891	0.904	0.612
Strategic Leadership	6	0.834	0.839	0.879	0.549

Refined Aggregate Model – both size groups

Table A17: Fornell-Larcker criterion (1981) for refined SMP-size Aggregate Model

	A_NET	AM_BI	IN_NO	OG_LE	PE_RF	SL-ED
Alliances & Networks	0.789					
Ambidexterity	0.507	0.760				
Innovativeness	0.462	0.715	0.777			
Learning	0.446	0.723	0.573	0.742		
Performance	0.369	0.641	0.645	0.557	0.782	
Strategic Leadership	0.502	0.697	0.707	0.649	0.560	0.741

Refined Aggregate Model – both size groups

In table A17, the figures in the diagonal are the square root of the AVE of each DCs construct.

The SMP Size-Group-1 sub-model (Refined)

For the Size-Group-1 sub-model, the indicators had loadings exceeding 0.7, with three (3) indicators [LE_01, LE_05, AM_04] having loadings higher than 0.6 but less than 0.7, and one (1) indicator [SL_11] with loading of 0.585. Thus the indicator loadings were considered satisfactory. See Table A18 below.

Table A18: Outer loadings for refined SMP Size-Group-1 sub-model

Indicators	Alliances & Networks	Ambidexterity	Innovativeness	Learning	Performance	Strategic Leadership
AM_01		0.757				
AM_02		0.727				
AM_03		0.732				
AM_04		0.660				
AM_05		0.814				
AM_06		0.796				
AM_07		0.758				
AN_01	0.836					
AN_03	0.767					
AN_04	0.792					
FP_01					0.878	
FP_03					0.733	
FP_04					0.745	
FP_05					0.721	
FP_06					0.839	
FP_07					0.788	
IN_02			0.738			
IN_04			0.775			
IN_05			0.767			
IN_06			0.804			
IN_07			0.786			
IN_08			0.804			
IN_09			0.722			
LE_01				0.664		
LE_02				0.709		
LE_05				0.620		
LE_06				0.772		
LE_09				0.784		
LE_10				0.733		
LE_11				0.859		
SL_05						0.769
SL_06						0.705
SL_07						0.703
SL_08						0.735
SL_10						0.793
SL_11						0.585

The composite reliability values were higher than 0.8, and the AVE values exceeded 0.5, thereby confirming the internal consistency reliability and convergent validity of the sub-model (Size-Group-1). The square root of AVE of each latent construct in the model was larger than the latent variable correlation - confirming the Fornell-Larcker criterion (1981); the loading of each indicator to its latent variable was higher than its loading to other constructs – confirming each construct’s cross-loadings. Thus, discriminant validity was satisfied for Size-Group-1 model. See table A19 and table A20.

Table A19: Construct Reliability for refined Size-Group-1

	No of Items	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Alliances & Networks	3	0.735	0.791	0.841	0.638
Ambidexterity	7	0.870	0.873	0.900	0.563
Innovativeness	7	0.886	0.889	0.911	0.595
Learning	7	0.859	0.868	0.892	0.545
Performance	6	0.877	0.896	0.906	0.618
Strategic Leadership	6	0.810	0.818	0.864	0.516

Refined Size-Group-1 sub-model

Table A20: Fornell-Larcker criterion (1981) for refined Size-Group-1

	A_NET	AM_BI	IN_NO	OG_LE	PE_RF	SL-ED
Alliances & Networks	0.799					
Ambidexterity	0.472	0.751				
Innovativeness	0.389	0.694	0.771			
Learning	0.405	0.706	0.556	0.738		
Performance	0.291	0.641	0.642	0.527	0.786	
Strategic Leadership	0.449	0.671	0.684	0.637	0.529	0.718

Refined Size-Group-1 sub-model

The SMP Size-Group-2 sub-model (Refined)

In the sub-model for Size-Group-2, six (6) indicators had loadings > 0.6 but < 0.7, and one (1) indicator (LE_05) had loading of 0.580. The other thirty-three (33) indicators had loadings > 0.7. Thus, indicator reliability was achieved. See Table A21 below.

Table A21: Outer loadings for refined SMP Size-Group-2 sub-model

Indicators	Alliances & Networks	Ambidexterity	Innovativeness	Learning	Performance	Strategic Leadership
AM_01		0.770				
AM_02		0.771				
AM_03		0.730				
AM_04		0.672				
AM_05		0.780				
AM_06		0.758				
AM_07		0.814				
AN_01	0.795					
AN_03	0.696					
AN_04	0.776					
FP_01					0.803	
FP_03					0.695	
FP_04					0.793	
FP_05					0.718	
FP_06					0.848	
FP_07					0.733	
IN_02			0.672			
IN_04			0.774			
IN_05			0.784			
IN_06			0.767			
IN_07			0.731			
IN_08			0.766			
IN_09			0.713			
LE_01				0.717		
LE_02				0.752		
LE_05				0.580		
LE_06				0.785		
LE_09				0.780		
LE_10				0.792		
LE_11				0.841		
SL_05						0.771
SL_06						0.692
SL_07						0.810
SL_08						0.824
SL_10						0.791
SL_11						0.602

With the AVE values > 0.5 , and the composite reliability values > 0.8 , the internal consistency reliability of the sub-model for Size-Group-2 was assured. Each indicator loaded higher on its latent variable than its loading to other constructs, confirming satisfactory cross-loading. Also the Fornell-Larcker criterion (1981) was met as square root of AVE of each latent construct in the model was larger than the latent variable correlation. Therefore, discriminant validity was satisfactory for Size-Group-2 sub-model. See table A22 and table A23.

Table A22: Construct Reliability for refined Size-Group-2

	No of Items	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Alliances & Networks	3	0.643	0.664	0.801	0.573
Ambidexterity	7	0.876	0.884	0.904	0.574
Innovativeness	7	0.866	0.866	0.897	0.555
Learning	7	0.870	0.872	0.901	0.568
Performance	6	0.859	0.864	0.895	0.588
Strategic Leadership	6	0.843	0.852	0.886	0.566

Refined Size-Group-2 sub-model

Table A23: Fornell-Larcker criterion (1981) for refined Size-Group-2

	A_NET	AM_BI	IN_NO	OG_LE	PE_RF	SL-ED
Alliances & Networks	0.757					
Ambidexterity	0.503	0.758				
Innovativeness	0.613	0.729	0.745			
Learning	0.432	0.748	0.628	0.754		
Performance	0.524	0.592	0.614	0.634	0.767	
Strategic Leadership	0.531	0.678	0.679	0.654	0.536	0.752

Refined Size-Group-2 sub-model

APPENDIX J

A5.1 Assessment of Initial Measurement and Structural Model quality [I_COM]

The measurement and structural model qualities of the initial aggregate model have been evaluated in Chapter 5. See Figure 5.2. Also see Tables 5.8, 5.9, 5.10, and 5.11.

The initial I_COM-y Sub-Model

For the I_COM-y sub-model, indicators had loadings > 0.7 (with the exception of ten (10) indicators with loadings > 0.6 but < 0.7, and one (1) indicator – SL_11 - with loading > 0.5 but < 0.6). The composite reliability values were > 0.8, indicating satisfactory internal consistency reliability. One (1) latent construct – strategic leadership had AVE = 0.490 - less than the required threshold of 0.5, implying failure of the measurement model to meet convergent validity although all other constructs had AVE > 0.5. As a model refinement is required to improve convergent validity, discriminant validity was not assessed at this stage. See Table A24.

Table A24: Construct Reliability and Validity for initial I_COM-y sub-model

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Alliances & Networks	0.752	0.836	0.838	0.565
Ambidexterity	0.866	0.868	0.897	0.555
Innovativeness	0.885	0.887	0.911	0.594
Learning	0.869	0.879	0.898	0.527
Performance	0.872	0.891	0.903	0.609
Strategic Leadership	0.823	0.831	0.869	0.490

The initial I_COM-n Sub-Model

For the I_COM-n sub-model, the loadings were > 0.7 for thirty (34) indicators, five (4) indicators with loadings > 0.6 but < 0.7; and one (1) indicator had loadings > 0.5 but < 0.6. The composite reliability values were > 0.8, and AVE > 0.5, however, the Fornell-Larcker criterion (1981) was not met for two latent constructs – Strategic Leadership and Learning. Because this failure implied that discriminant validity was not satisfied, indicator cross-

loadings and HTMT (other measures of discriminant validity) were not assessed at this stage since model refinement was required. See table A25 and A26.

Table A25: Construct Reliability and Validity for initial I_COM-n sub-model

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Alliances & Networks	0.701	0.719	0.811	0.517
Ambidexterity	0.903	0.910	0.923	0.632
Innovativeness	0.905	0.907	0.925	0.637
Learning	0.871	0.880	0.900	0.534
Performance	0.879	0.893	0.908	0.625
Strategic Leadership	0.867	0.874	0.898	0.559

Table A26: Fornell-Larcker Criterion (1981) for initial I_COM-n sub-model

	A_NET	AM_BI	IN_NO	OG_LE	PE_RF	SL-ED
Alliances & Networks	0.719					
Ambidexterity	0.598	0.795				
Innovativeness	0.586	0.743	0.798			
Learning	0.512	0.756	0.578	0.731		
Performance	0.433	0.765	0.706	0.569	0.790	
Strategic Leadership	0.538	0.760	0.733	0.686	0.677	0.747

A5.2 Evaluation of Refined Measurement and Structural Model: I_COM

The model was refined in order to improve indicator reliability and internal consistency reliability for I_COM-y sub-model, and discriminant validity for I_COM-n sub-model. This was done by omitting a number of indicators with low loadings from the aggregate (base) model. The path coefficients for the refined model are presented in Figure A4, and followed by an assessment of the quality criteria of the refined model (also see Table A27):

Figure A4: Results of Path Coefficients Estimates for Competitive Intensity – Refined Aggregate Model

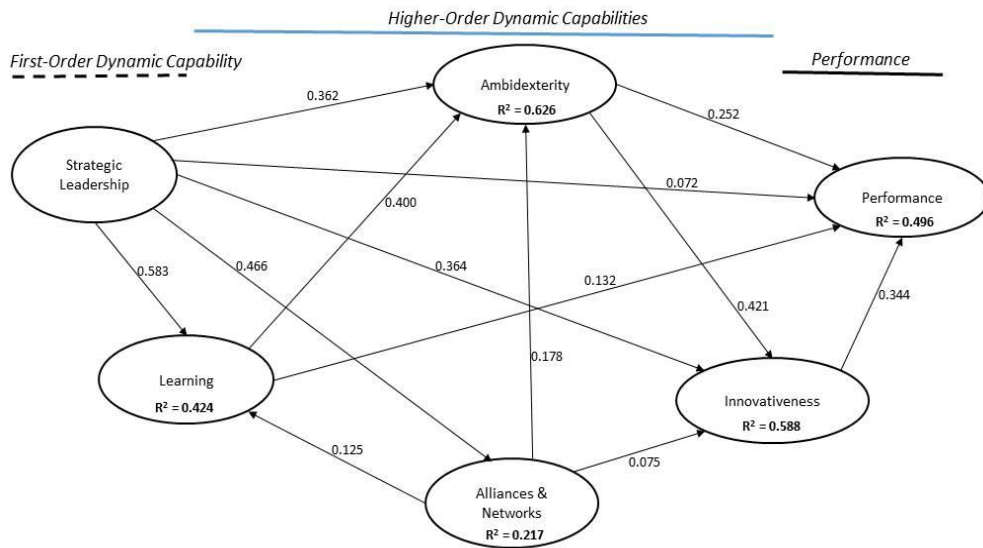


Figure A4: Results of path coefficients estimates for refined I_COM model

The I_COM Aggregate Model (Refined):

The loadings for indicators were > 0.7 (except for the following four (4) indicators with loadings > 0.6 but < 0.7 : SL_04 = 0.628; LE_07 = 0.674; AN_02 = 0.688; AM_04 = 0.681). These indicator loadings were satisfactory, considering that (i) only 4 loadings were below 0.7 but above 0.6, (ii) each construct had multiple indicators, (iii) indicators should only be removed if such omission improves construct validity without impacting on content validity (e.g. Hair et al. 2014). Therefore, indicator reliability was established. See table A27 below.

Table A27: Outer loadings for refined I_COM aggregate model

Indicators	Alliances & Networks	Ambidexterity	Innovativeness	Learning	Performance	Strategic Leadership
AM_01		0.768				
AM_02		0.752				
AM_03		0.742				
AM_04		0.681				
AM_05		0.810				
AM_06		0.787				
AM_07		0.771				
AN_01	0.827					
AN_02	0.688					
AN_03	0.723					
AN_04	0.736					
FP_01					0.863	
FP_03					0.742	
FP_04					0.735	
FP_05					0.704	
FP_06					0.850	
FP_07					0.788	
IN_02			0.713			
IN_04			0.786			
IN_05			0.783			
IN_06			0.809			
IN_07			0.793			
IN_08			0.810			
IN_09			0.741			
LE_02				0.715		
LE_06				0.768		
LE_07				0.674		
LE_09				0.801		
LE_10				0.765		
LE_11				0.876		
SL_04						0.628
SL_05						0.797
SL_06						0.719
SL_07						0.748
SL_08						0.752
SL_10						0.790

The composite reliability values were > 0.8 , establishing internal consistency reliability; and AVE values were > 0.5 , establishing convergent validity of the model. The loading of each indicator to its latent variable was higher than its loading (cross-loadings) to other constructs, indicating satisfactory indicator cross-loadings; the Fornell-Larcker criterion (1981) was satisfied as the square root of AVE of each latent construct in the model was larger than the latent variable correlation; all construct had satisfactory HTMT ratio as the values were less

than 0.845. This implies that discriminant validity was also established for the refined aggregate model – I_COM. See Tables A28, A29 and A30.

Table A28: Construct Reliability and Validity for refined I_COM model

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Alliances & Networks	0.743	0.800	0.833	0.556
Ambidexterity	0.878	0.880	0.905	0.577
Innovativeness	0.890	0.891	0.914	0.604
Learning	0.860	0.869	0.896	0.592
Performance	0.873	0.891	0.904	0.612
Strategic Leadership	0.834	0.841	0.879	0.549

Table A29: Fornell-Larcker Criterion (1981) for refined I_COM model

	A_NET	AM_BI	IN_NO	OG_LE	PE_RF	SL-ED
Alliances & Networks	0.745					
Ambidexterity	0.506	0.760				
Innovativeness	0.458	0.714	0.777			
Learning	0.397	0.703	0.541	0.769		
Performance	0.366	0.641	0.646	0.542	0.782	
Strategic Leadership	0.466	0.702	0.694	0.641	0.572	0.741

Table A30: Heterotrait-Monotrait Ratio (HTMT) for refined I_COM model

	Alliances & Networks	Ambidexterity	Innovativeness	Learning	Performance
Alliances & Networks					
Ambidexterity	0.595				
Innovativeness	0.517	0.798			
Learning	0.457	0.804	0.609		
Performance	0.412	0.714	0.704	0.605	
Strategic Leadership	0.535	0.816	0.792	0.759	0.644

The I_COM-y sub-model (Refined)

For the I_COM-y sub-model, the indicators had loadings exceeding 0.7, with eight (8) indicators (SL_04, SL_06, LE_02, LE_07, AN_02, IN_09, AM_04, FP_05) having loadings > 0.6 but < 0.7. Thus the indicator loadings were considered satisfactory, thereby establishing indicator reliability. See table A31 below.

Table A31: Outer loadings for refined I_COM-y sub-model

Indicators	Alliances & Networks	Ambidexterity	Innovativeness	Learning	Performance	Strategic Leadership
AM_01		0.740				
AM_02		0.731				
AM_03		0.712				
AM_04		0.672				
AM_05		0.793				
AM_06		0.769				
AM_07		0.788				
AN_01	0.853					
AN_02	0.670					
AN_03	0.719					
AN_04	0.752					
FP_01					0.859	
FP_03					0.754	
FP_04					0.731	
FP_05					0.694	
FP_06					0.842	
FP_07					0.787	
IN_02			0.703			
IN_04			0.790			
IN_05			0.781			
IN_06			0.807			
IN_07			0.803			
IN_08			0.804			
IN_09			0.697			
LE_02				0.698		
LE_06				0.784		
LE_07				0.642		
LE_09				0.789		
LE_10				0.755		
LE_11				0.884		
SL_04						0.619
SL_05						0.794
SL_06						0.694
SL_07						0.753
SL_08						0.742
SL_10						0.760

The composite reliability values were > 0.8, and the AVE values exceeded 0.5, thereby confirming the sub-model's (I_COM-y) internal consistency reliability and convergent

validity. The square root of AVE of each latent construct in the model was larger than the latent variable correlation - confirming satisfaction of Fornell-Larcker criterion (1981); the loading of each indicator to its latent variable was higher than its loading to other constructs – validating the criteria for indicator cross-loadings. Also, the HTMT ratios for each construct were satisfactory as they were < 0.845 .¹³⁷ These results show that discriminant validity was satisfied for I_COM-y sub-model. See tables A32, A33 and A34.

Table A32: Construct Reliability and Validity for refined I_COM-y

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Alliances & Networks	0.752	0.841	0.837	0.564
Ambidexterity	0.866	0.868	0.897	0.555
Innovativeness	0.885	0.887	0.911	0.594
Learning	0.854	0.867	0.892	0.582
Performance	0.872	0.891	0.903	0.609
Strategic Leadership	0.822	0.828	0.871	0.532

Table A33: Fornell-Larcker Criterion for refined I_COM-y

	A_NET	AM_BI	IN_NO	OG_LE	PE_RF	SL-ED
Alliances & Networks	0.751					
Ambidexterity	0.474	0.745				
Innovativeness	0.413	0.706	0.771			
Learning	0.367	0.690	0.536	0.763		
Performance	0.352	0.605	0.627	0.543	0.780	
Strategic Leadership	0.441	0.678	0.679	0.642	0.547	0.729

¹³⁷ This is the more conservative value for HTMT ratio.

Table A34: Heterotrait-Monotrait Ratio (HTMT) for refined I_COM-y

	Alliances & Networks	Ambidexterity	Innovativeness	Learning	Performance
Alliances & Networks					
Ambidexterity	0.550				
Innovativeness	0.460	0.796			
Learning	0.414	0.793	0.605		
Performance	0.387	0.678	0.685	0.609	
Strategic Leadership	0.499	0.801	0.781	0.768	0.615

The I_COM-n sub-model (Refined)

In the I_COM-n sub-model, three (3) indicators (AM_04, AN_04, and SL_04) had loadings higher than 0.6 but less than 0.7. All other thirty-six (36) indicators had loadings larger than 0.7. Thus, indicator reliability was achieved. See table A35 below.

Table A35: Outer loadings for refined I_COM-n sub-model

Indicators	Alliances & Networks	Ambidexterity	Innovativeness	Learning	Performance	Strategic Leadership
AM_01		0.823				
AM_02		0.793				
AM_03		0.808				
AM_04		0.684				
AM_05		0.845				
AM_06		0.836				
AM_07		0.767				
AN_01	0.755					
AN_02	0.723					
AN_03	0.722					
AN_04	0.675					
FP_01					0.871	
FP_03					0.712	
FP_04					0.746	
FP_05					0.736	
FP_06					0.866	
FP_07					0.796	
IN_02			0.750			
IN_04			0.786			
IN_05			0.789			
IN_06			0.826			
IN_07			0.757			
IN_08			0.828			
IN_09			0.847			
LE_02				0.757		
LE_06				0.734		
LE_07				0.752		
LE_09				0.828		
LE_10				0.794		
LE_11				0.862		
SL_04						0.669
SL_05						0.799
SL_06						0.747
SL_07						0.731
SL_08						0.755
SL_10						0.848

With the AVE values higher than 0.5, convergent validity was assured, and with composite reliability values larger than 0.8, the internal consistency reliability of I_COM-n sub-model was established. Each indicator loaded higher on its latent variable than its loading to other constructs, confirming satisfactory cross-loading. Also the Fornell-Larcker criterion (1981) was met as square root of AVE of each latent construct in the model was larger than the latent variable correlation. Assessment of HTMT ratios also show satisfactory results as the values for all constructs were smaller than 0.845. Therefore, discriminant validity was satisfactory for I_COM-n sub-model. See tables A36, A37, and A38.

Table A36: Construct Reliability and Validity for refined I_COM-n

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Alliances & Networks	0.701	0.718	0.811	0.517
Ambidexterity	0.903	0.909	0.923	0.633
Innovativeness	0.905	0.907	0.925	0.637
Learning	0.878	0.883	0.908	0.623
Performance	0.879	0.893	0.908	0.625
Strategic Leadership	0.853	0.861	0.891	0.578

Table A37: Fornell-Larcker Criterion (1981) for refined I_COM-n

	A_NET	AM_BI	IN_NO	OG_LE	PE_RF	SL-ED
Alliances & Networks	0.719					
Ambidexterity	0.598	0.795				
Innovativeness	0.586	0.742	0.798			
Learning	0.490	0.743	0.553	0.789		
Performance	0.434	0.764	0.706	0.543	0.790	
Strategic Leadership	0.517	0.746	0.741	0.652	0.681	0.760

Table A38: Heterotrait-Monotrait Ratio (HTMT) for refined I_COM-n

	Alliances & Networks	Ambidexterity	Innovativeness	Learning	Performance
Alliances & Networks					
Ambidexterity	0.711				
Innovativeness	0.680	0.802			
Learning	0.588	0.832	0.612		
Performance	0.509	0.835	0.769	0.598	
Strategic Leadership	0.605	0.836	0.831	0.751	0.763