Strategic Leadership and Firm Performance: The Mediating Role of Ambidexterity in Professional Services SMEs

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ABSTRACT

The role of strategic leadership is pivotal in determining a firm's direction and shaping its processes, competencies and performance. Strategic leadership also develops, deploys and reconfigures the firm's ambidextrous capabilities (such as innovativeness, competiveness and adaptability) that influence performance. Using responses from 315 UK small and medium-sized accountancy firms, this study empirically investigates the extent to which the direct influence of strategic leadership on performance is mediated by the firm's ambidextrous orientation. With a VAF of 57.78%, the results show that ambidexterity has a partial mediating effect on the relationship between strategic leadership and the performance of accountancy firms. Also, our findings show that the perception of environmental dynamism does not influence the ambidextrous orientation of these accountancy firms. In addition, increased firm's agedoes not necessarily lead to decreased performance resulting from inertia.

Keywords: Leadership; ambidexterity; performance; strategy; accountancy firms

I. Introduction

Ambidextrous enterprises have the capability to simultaneously pursue both incremental and discontinuous innovation, and benefit from more sustainable competitive advantages. The long-term success of such enterprises is ensured by balancing the need for improved efficiency in, and extension of, existing processes and technologies[i] while simultaneously innovating and adapting to environmental changes[ii] (March 1991). Ambidextrous strategies represent a fundamental challenge for senior management and are particularly problematic for smaller firms (Ebben & Johnson 2005) because of their resource constraints. Thus, in order to influence firm performance, strategic leadership should create and shape the functioning of organisational ambidexterity by stimulating exploitation and exploration activities and creating opportunity for the pursuit of both (Geerts, Blindenbach-Driessen, & Gemmel 2010).

An understanding of how senior management allocate the responsibility for valuing (Knight & Cuganesan 2020), and simultaneous management of the exploration-exploitation tension at various organisational levels is difficult (Birkinshaw & Gupta, 2013), considering the complexity of the structure of organisational ambidexterity as a construct (Good & Michel 2013; Junni *et al.* 2015). Also, the staffing, structural and incentive decisions of senior management dictate the initiatives that result from the operating levels of the firm (Schnellbacher & Heidenreich 2020; Finkelstein, Hambrick, & Cannella 2009). This underlines the dominant effect of senior management on activities at all levels of the organisation (Finkelstein, Hambrick, & Cannella 2009). Notwithstanding, Knight and Cuganesan (2020) argue that re-orientation of strategic priorities involves a process of socialisation in which structures alone are insufficient. This could be true of professional services firms (PSFs), particularly smaller PSFs in which exploitation and exploration activities are both conducted at the frontline. PSFs are firms 'whose primary assets are a highly educated (professional) workforce and whose outputs are intangible services encoded with complex knowledge' (Greenwood et al. 2005, p.661). These firms collectively serve as knowledge base for businesses. Therefore, we focus on PSFs that offer accounting and business advisory services, particularly small and medium-sized accountancy firms

(SMAFs), considering the peculiarity of accounting firms within PSFs. This is because accounting firms provide services to firms in every industry, including to other PSFs.

In the UK accountancy practice sector, resource constraints require SMAFs to limit their provision of business services to small and medium-sized enterprise (SME) clients in specific industries or sectors. This suggests that the larger accountancy firms (e.g. the Big 4 accountancy firms) can compete for clients that are both SMEs and large firms across industries, but SMAFs are not able to compete for clients that are large firms. This is unlike in other industries such as manufacturing or engineering in which the client base for smaller and large firms are different, with the smaller firms usually suppliers or subcontractors to the large firms. Due to the dynamic environment in which SMAFs operate, survival and performance improvement would be directly impacted by the firm's strategic leadership, and indirectly by the deployment of an ambidextrous orientation. Consequently, senior-leadership teams must integrate and mobilise operations across organisational units to attain synergistic benefits (Knight & Cuganesan 2020). Understanding how these dynamic capabilities (DCs) directly and indirectly influence SMAFs' performance is important considering that SMAFs are financial advisers of choice for SMEs (Schizas, Jarvis, & Daskalakis 2012) who provide a wide range of products and services and contribute disproportionately to job creation and employment of skills in the UK (BIS 2014).

Although it is suggested by a few researchers that senior leaders are less important than frontline staff in managing the tensions resulting from ambidexterity (e.g. Zimmerman et al. 2015), others contend that these leaders are considered pivotal in strategy, considering the tone at the top of the organisation set by their response to the tensions (e.g. Michel 2014). Yet, others argue that senior leaders may paradoxically but constructively open up the tensions instead of resolving them (e.g. Knight & Cuganesan 2020) with consequences for firm revenue (Voss & Voss 2013). Therefore, it is important for SMAFs to understand the effect of strategic leadership and ambidexterity on their performance. This research set out to enhance that understanding.

Previous studies have employed a fragmented or piece-meal approach in analysing ambidexterity at different organisational levels (Raisch *et al.* 2009), and on firm that firms have organisational and governance structures that differ

from PSFs (e.g. Kiss *et al.* 2020; Lucena & Roper 2016; Greenwood *et al.* 2005). Furthermore, previous studies investigated ambidexterity and its effect in various organisational contexts with few studies on SMEs (e.g., Lubatkin *et al*. 2006), but neither addressed the effect of ambidexterity in accountancy firms (PFS), nor the interplay between strategic leadership, ambidexterity and firm performance in that industry (e.g. Schnellbacher & Heidenreich 2020; Rogan & Mors 2017; Brivot 2011; Robertson, Scarbrough, & Swan 2003). This is important considering the peculiarities of the professional services industry in which accountancy firms operate which distinguish them from firms operating in other industries.

For the purpose of this study, we define strategic leadership as the ability of top/senior management to determine the strategic direction or orientation of the firm, set its objectives, and set the tone at the top of the firm. It is also the ability of senior management to acquire, manage and deploy relevant resources, and implement necessary routines to enable the firm improve its performance and be future-fit (Hakala 2011; Giniuniene & Jurksiene, 2015). In theory, the interplay between strategic leadership, organisational ambidexterity and firm performance explains how the firm's performance can be improved by adopting a strategic trajectory that employs and reinforces ambidextrous activities in the firm. We test this argument by addressing the research question: Does organisational ambidexterity mediate the effect of strategic leadership on the performance of SMAFs? Implicit in this question is the relationship between strategic leadership and performance, strategic leadership and ambidexterity, and between ambidexterity and performance. We propose that firm performance depends on whether strategic leadership, *a first-order DC*, effectively manages organisational ambidexterity, *a higher-order DC*, thereby producing a positive interaction that balances the tensions and trade-offs between alignment (exploitation) and adaptability (exploration) streams of ambidexterity. We conceptualise and measure strategic leadership, ambidexterity and performance at the firm level.

Drawing on a cross-sectional, quantitative survey data of 315 SMAFs in the UK, we make a contribution with the following findings: (i) Strategic leadership's impact on performance is partially mediated by ambidexterity. (ii) Organisational ambidexterity in PSFs is positively influenced by strategic leadership. (iii) Accountancy firms are not characterised by decreased performance resulting from inertia as they age. (iv) The

perception of environmental dynamism does not significantly influence the ambidextrous orientation of small and medium-sized accountancy firms. The remainder of the paper is structured as follows. Section II contextualises the professional services firms. Section III reviews the literature while we elaborate on the theoretical underpinnings of our research and develop testable hypotheses in section IV. Section V describes our data, their sources and develops quantitative measures employed in this study. Our empirical results, analysis and discussion are presented in section VI. We conclude in section VII.

II. Contextualising Professional Services Firms

PSFs are organisations whose critical success factor is their ability to create and manage knowledge, and to provide bespoke solutions to clients (Greenwood et al. 2005; Robertson, Scarbrough, & Swan 2003). Also, the outputs of PSFs (including consulting, law and accounting firms) are intangible applications of complex knowledge (Greenwood et al. 2005) encoded in services (e.g., Lowendahl 2000). Moreover, it is argued that by exercising their ability to mobilise and synthesise professionalised bodies of expertise, PSFs are able to continually create and apply knowledge to new contexts (Robertson, Scarbrough, & Swan 2003). Additionally, PSFs do not normally establish separate units for exploitation and exploration activities as innovation is an important activity of professionals who operate in their practice areas (Anand, Gardner, Anand & Morris 200). Therefore, PSFs are different from other category of firms, given that the exploitation and exploration of knowledge are embedded in their daily operations (Fu, Flood, & Morris 2016).

Furthermore, Greenwood et al. (2005) contend that while the PSF is dependent on its professional workforce considering the high mobility of its human assets, the asymmetry of information with its clients leaves the clients dependent on the PSF. These dependencies raise managerial challenges and result in distinctive organisational and governance structures that also differentiate PSFs from firms in other industries (Greenwood et al. 2005). This suggests that the main functions of PSFs raise unusual strategic and organisational challenges whose resolution impacts firm performance (Fu, Flood, & Morris 2016).

In searching for new business opportunities, knowledge and/or ideas, PSFs have normally depended on personalised interactions with clients (Wiklund & Shepherd 2005). This is because in PSFs, services are co-produced with clients since they (clients) are involved in creating and delivering the service they receive (Løwendahl 2005). Therefore, exploration in PSFs necessitates the involvement of clients which creates risk for clients, considering the time and resources they invest in the relationships (Gardner, Anand, & Morris 2008).

III. Literature review

In highly competitive markets, firms would be better prepared for survival by responding to competitive challenges through exploration and exploitation of new business opportunities (Wilden *et al*. 2013; Rosenbloom 2000). This requires firms to be ambidextrous, which is identified as dynamic Capabilities (DC) (Zahra & George 2002). DCs are the firm's capacity to integrate, build, and reconfigure internal competences in order to address changes in rapidly changing environments and achieve goal congruence (Teece, Pisano, & Shuen 1997). On the one hand, first-order DCs are those managerial decisions taken under uncertainty (Teece 2018), and involve first-order change such as new product development or creation of news business markets, with a focus on scale and territorial markets instead of product attributes (Winter 2003, *p.992*). On the other hand, higher-order DCs are those that facilitate the sensing, seizing, and transforming of competences or new or changed opportunities (Teece 2018).

Ambidexterity, the ability of an organisation to simultaneously exploit its existing capabilities and explore completely new ones (O'Reilly & Tushman 2013; Geerts, Blindenbach-Driessen, & Gemmel 2010; Jansen, Van den Bosch, & Volberda 2009; Gibson & Birkinshaw 2004; Tushman & O'Reilly 1996; March 1991), has emerged as an important theme in management research (Junni *et al.* 2013). Considering that senior management is faced with complex, varied and ambiguous information in organisational decision-making process, the same array of options will not be identified, often preferred, or identically implemented by two strategists (Finkelstein, Hambrick, & Cannella 2009; Hambrick & Mason 1984). This is because executive decisions are profoundly affected by human factors including biases, egos, aptitudes, and experiences (Finkelstein, Hambrick, & Cannella 2009; Hambrick & Mason 1984, Finkelstein). It is

also because organisational ambidexterity, although identified as important, poses unique managerial challenges especially when exploration and exploitation are pursued simultaneously (Kiss et al. 2020). Additionally, due to the distinctive tasks performed by PSFs, managers encounter the challenge of designing structures that facilitate the transfer of knowledge from partners and/or directors to their professional workforce, as well as to retain and motivate staff (Greenwood et al. 2005). Therefore, it is argued that in dynamic environments, PSFs achieve competitive advantage primarily by combining the ability to appropriately deploy their knowledge assets and the ability to create assets that can take advantage of new opportunities (Fu et al. 2015).

The adequacy of the firm's response to strategic (competitive) challenges, to avoid falling into either a success trap or failure trap, depends on the effectiveness of its strategic leadership (senior executives) in implementing actions that directly and indirectly influence the firm's performance. Therefore, strategic leadership signifies management of an entire organisation with considerable responsibilities for decision-making, often further than the interpersonal and relational characteristics linked to leadership (Darwish et al. 2020; Giachetti & Torrisi 2018; Finkelstein, Hambrick, & Cannella 2009). On this basis, it is argued that cognitive flexibility be incorporated into models that study reasons for the search activities of managers and firms, and the related firm strategic effect of the search activities (Kiss *et al.* 2020). Although strategic choices occasionally result from inertia, imitation (e.g. Giachetti & Torrisi 2018), and cautious, objective decision-making, research indicates that strategic actions and other important decisions of the firm are made by individuals, founded on their idiosyncratic experiences, rationale and dispositions (Finkelstein, Hambrick, & Cannella 2009). This may be explained by the impact of CEO knowledge and managerial intention on leadership style (Zadeh, Hackney, & Zeng 2021). Through their search selection and search intensity, cognitively flexible CEOs are more likely to gather and process a higher quality and quantity of information that enables them to engage in new knowledge generation, and new and existing knowledge reconfiguration (Kiss et al. 2020). Therefore, Kollenscher et al. (2017) argue that fluency in both strategic management and transformational leadership is not sufficient to manage an organisation. They propose architectural leadership to supplement the two approaches and contend that architect leaders should provide organisation-wide guidance by preventing local optimisation and short-term measures.

Service routines are managerial practices that shape the firm's capabilities development and empower it to effectively respond to external environmental dynamism (Kenney & Gudergan 2006). They are also the organisational and managerial processes that support and allow DCs to be effectively utilised (Teece, Pisano, & Shuen 1997). Thus, the routines to acquire and release resources,[iii] including acquisition of new external resources for the enterprise, are related to DCs (e.g. Lane & Lubatkin 1998; Powell, Koput, & Smith-Doerr 1996), especially that of strategic leadership. In this regard, Rogan and Mors (2017) contend that in large firms, managers' abilities to explore for new business and knowledge is positively related to the extent to which their (managers) networks include relationships built using predominately individual rather than firm resources. They show that managers' investments of individual resources when building relationships may seem counterintuitive, but could actually benefit the long-term performance of the firm. Moreover, within a firm, the contradictions engendered by exploitation-exploration activities can impact the entire organisation (organisational ambidexterity), impact the same organisational level (horizontal ambidexterity) and/or cut across organisational levels (vertical ambidexterity) (Kassotaki, Paroutis, & Morrell 2019). Therefore, ambidexterity has to be managed across organisational levels as well as at each level (Chang 2015; Jansen et al. 2009). For this reason, Zadeh, Hackney, and Zeng (2021) contend that managers must create a learning environment that allows for experimentation and facilitate the participation of employees in decision-making.

Furthermore, ambidexterity may require specific cognitive capabilities to enable senior leadership evaluate risk in complex situations, to tolerate risks and tensions, and to adapt to environmental changes (Junni *et al.* 2015; Raisch *et al.* 2009; O'Reilly III & Tushman, 2008; Smith & Tushman, 2005). This is because cognitively flexible individuals, for instance, are more likely to have the capacity to change between different modes of thinking, obtain workable solutions to apparently conflicting problems, and, in new ways, combine and recombine knowledge derived from various sources (Martin & Anderson, 1998). Also, in the case of the Italian Air Force, the specific management practices aimed at simultaneously tackling problems of error, risk, and blame, *whereby unsafe acts, such as involuntary errors, incurred during flight operations are not sanctioned,* reinforced the importance of cognition in processes of

detection, analysis, and correction of errors (Mom et al. 2015). Furthermore, in the context of a large Scandinavian-based telecommunications organisation, ambidexterity was attained when a process of 'tension interpretation' suitable to the organisational level and strategic orientation was approved by managers (Papachroni et al. 2016, p.1793).

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 (Salvato 2003; Rosenbloom 2000). For instance, in a dynamic environment, the adoption of an innovation strategy, supported by organisational culture (Zadeh, Hackney, & Zeng 2021) encourages employees to persistently exploit necessary resources and business networks (Jiao, Alon, & Cui 2011). This is because the relational capital of an individual within an organization affects the extent to which he or she conducts exploration activities (Mom et al. 2015). They argue that because acquiring knowledge from other organisational members produces a positive effect while aligning goals with them result in a negative effect, relational capital may not foster individual exploration in all organisations. Therefore, organisations which intend to increase exploration need to create conditions (Mom et al. 2015) in which the positive effects that come through knowledge acquisition outweigh the negative effects arising from goal alignment (Mom et al. 2015). Therefore, senior-leadership plays a significant role in facilitating the exploratory learning process (Zadeh, Hackney, & Zeng 2021).

Luger, Raisch, & Schimmer (2018) posit that ambidexterity-firm performance relationship is contextual. They argue that while the learning effects of maintaining ambidexterity, which result in superior performance, are more beneficial to firms in environments of incremental change, those in environments of discontinuous change are mostly impacted by the negative performance effects resulting from the misalignment created by reinforcement. Also, while the returns of firms that mainly focus on exploitation may be predictable but not sustainable (Levinthal & March 1993), those of firms that principally focus on exploration would be unpredictable, with likely performance benefits occurring in the long-term (Volberda & Lewin 2003). Thus it is argued that organisational ambidexterity is a prized outcome with practitioners being

zealous to pursue its achievement while scholars are hesitant to pronounce its attainment (Knight & Cuganesan 2020).

IV. Hypotheses development

Strategic leadership and firm Performance

The responsibility and capability to evaluate and decide changes to the configuration and reconfiguration of the firm's resource base remain with senior management (Teece 2018, 2012). This is because the combination of DCs with good strategy (Rumelt 2011, Teece 2018) enables the firm[iv] to deploy and redeploy its assets, in order to adapt to changes in its competitive environment (Teece 2012). Therefore, organisational transformation requires competent and trained leadership (Kavanagh & Ashkanasy 2006). For instance, the existence of turnaround CEOs and other turnaround specialists in the market for professional services is indicative 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). Thus, considering some senior executives have DCs that can facilitate strategic change (Rosenbloom 2000), it is probable that differences in the benefits conferred by these capabilities are due to variation in managerial cognition (Adner & Helfat 2003) or managerial cognitive flexibility (Kiss et al. 2020; Martin, Staggers, & Anderson 2011). Furthermore, the differences in experiences, capabilities, values, and personalities of top management result in differences in their levels of aspiration, understanding and interpretation of strategic incentives, views about causation, objectives and their exigencies (Finkelstein, Hambrick, & Cannella 2009). Therefore, organisations are reflection of their senior executives (Hambrick & Mason 1984) who vary in their behaviours as well as in the actions they take (Finkelstein, Hambrick, & Cannella 2009). Such actions, including creating a suitable organisational culture, could be considered essential for superior firm performance considering it prescribes the common language employees should use in collective learning of the resolution of problems (Floyd & Lane 2000).

By interacting directly with middle management, senior management can directly communicate and foster exploitative and exploratory activities (Heyden, Sidhu, & Volberda 2018). They also indirectly encourage exploitation-exploration activities of

employees at the lower organisational level whose direct communication is with middle management (Zimmermann, Raisch & Birkinshaw 2015; Jansen, Van den Bosch & Volberda 2009). Thus, in order to understand strategic processes and outcomes, the managerial layers of top management and middle management should be jointly considered (Heyden, Sidhu, & Volberda 2018). This is particularly important for SMAFs which have lean managerial structures often with little or no middle management. This also supports the holistic approach of this study. Therefore, the growth and survival of such firms depend on their managers' ability to explore for new business and knowledge (Rogan & Mors 2017).

Although resource investment and resource deployment (Rogan & Mors 2017; Sirmon, Gove, & Hitt 2008; Brady & Davies 2004) are essential to corporate success, striking an equitable balance between the two is important for firm performance (Sirmon, Gove, & Hitt 2008). Also, improved performance may result from a firm's endeavours to anticipate demand and aggressively position new product/service offerings (Ireland, Hitt, & Sirmon 2003). Although there is considerable variation in the magnitude of Entrepreneurial Orientation (EO)-performance correlation, conceptual and empirical arguments show that pursuit of EO may influence higher firm performance (e.g. Khedhaouria *et al.* 2020; Rauch *et al*. 2009), especially financial growth in small firms (Khedhaouria *et al.* 2020). We, therefore, develop the following hypothesis:

H_1**:** Strategic leadership is positively related to firm performance

Strategic leadership and organisational ambidexterity

In order to successfully engage in simultaneous exploration and exploitation activities (as with PSFs), a firm requires a senior management team with cognitive and behavioural flexibility, to be able to adapt as well as establish and nurture a coherent alignment between its competencies, structures and cultures (Kiss *et al.* 2020; Martin, Staggers, & Anderson 2011; O'Reilly & Tushman 2008; Brady & Davies 2004). This is because competing demands for managerial attention and resources, resulting from the simultaneous pursuit of exploration and exploitation activities, provoke tensions in relation to the organisation-wide valuation and strategic prioritisation of both streams of activities (Knight & Cuganesan 2020).

Furthermore, integration and differentiation of exploitation- and exploration-activities are complementary mechanisms for achieving organisational effectiveness (Raisch *et al*. 2009). Thus, in order not to undermine the coordination required for an equitable exploration and exploitation activities, senior management 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 & Tushman 2005). Furthermore, the effectiveness of organisational ambidexterity takes cognisance of organisational structure and environmental dynamism (Heracleous & Werres 2016; Eisenhardt, 2013; Raisch *et al.* 2009). These are important considering the sustainability of ambidexterity requires diverse solutions, including structural and contextual, thus requiring a dynamic rather than static approach to management (Raisch *et al*. 2009; Siggelkow & Levinthal 2003). In this respect, Kiss et *al.* (2020) identify CEO cognitive flexibility as particularly important to achieving organisational ambidexterity. They argue that high levels of organisational ambidexterity are associated with the more effortful and persistent search activities (i.e. search intensity) of cognitively flexible CEOs. Furthermore, although cognitively flexible CEOs also rely on outside information (search selection), the use of external information has a limited role in organisational ambidexterity (ibid). Additionally, Szatmari & Deichmann (2022) contend that the point of commencement of organisational decision making influences the interchange between refusing profitable opportunities and reducing the probability of accepting adverse alternatives.

Prior research is inconsistent as to whether the positive effects of transformational leadership on ambidexterity is direct or indirect, probably because the relationship between leadership and ambidexterity is more complex than that proposed by the transformational leadership theory (Junni *et al.* 2015). Thus, other leadership styles, which may require leaders to combine or switch between, have been related to ambidexterity (ibid). Schnellbacher & Heidenreich (2020) contend that attention should be focused on what and how knowledge is sought and offered, to stimulate exploration and exploitation efforts so that the optimum potential of individual ambidexterity is unlocked. Thus, organisations' intent on increasing exploration should create conditions in which the positive impact from knowledge acquisition exceed the negative consequences of goal alignment (Mom *et al.* 2015). This suggests that an intelligent leader would not only determine how leadership behaviour could be applied

to various situations, but also exhibit the high-level transactional and transformational leadership behaviour required (Luo *et al.* 2018).

The application of ambidexterity requires senior management to balance the resource allocation between exploitation and exploration (Birkinshaw & Gupta 2013; O'Reilly & Tushman 2013) for effective implementation of ambidexterity. Even where resources are abound, achieving the desired ambidexterity requires resources flexibility (Costanzo 2019). In this regard, Knight and Cuganesan (2020) contend that the valuation practices of senior-leadership lead to valuing and realising the synergistic exploit-explore benefits resulting from implementation of organisational strategy. Therefore, when management has the ability to consciously and repeatedly deploy firm assets and resources, ambidexterity results as it enables a firm to reconfigure existing assets and learn new capabilities to both explore and exploit (O'Reilly & Tushman 2008). The foregoing literature enables us to hypothesise as follows:

H_2**:** Strategic leadership is positively related to organisational ambidexterity.

The direct effects of ambidexterity on firm performance

It is argued that a primary factor in firm survival and prosperity is its simultaneous development of exploitation and exploration activities (March 1991), especially in fast paced environments that are characterised by intense competition and frequent changes in process and product related technologies (Benner & Tushman 2003, Zhang *et al.* 2019; Schnellbacher & Heidenreich 2020). In such dynamic environments, there is a positive relationship between organisational ambidexterity and growth in firm innovation, greater survival rates and improved financial performance (O'Reilly & Tushman 2013, Zhang *et al.* 2019; Nel, Milburn-Curtis, & Lehtisaari 2020). This is because ambidextrous orientation is pivotal to organisational survival (Jansen et al., 2009) and could be associated with superior financial performance (Junni et al. 2013; He and Wong, 2004).

In the context of incremental change, superior firm performance results from the learning effects of ambidexterity (Luger, Raisch, & Schimmer 2018). Also, it is argued that ambidexterity has a positive effect on performance growth (Geerts,

Blindenbach-Driessen, & Gemmel 2010; Giniuniene and Jurksiene, 2015), with firms that are able to simultaneously pursue exploration and exploitation more likely to achieve higher performance than those that focus more on one to the detriment of the other (Tushman & O'Reilly 1996). Moreover, the general consensus is that ambidexterity positively influences firm performance (Junni *et al.* 2013), and is an important determinant in organisational success (Lubatkin *et al.* 2006; Gibson & Birkinshaw 2004; He & Wong 2004). Consequently, we hypothesise that:

H_3**:** There is a positive relationship between ambidexterity and firm performance

The indirect effect of strategic leadership on firm performance

In larger firms, the quest for greater ambidexterity may encourage senior management to create business units that are structurally separate. In such firms, each unit could concentrate on either exploration or exploitation, rather than strive at creating business units with the capacity to pursue both activities (e.g. Lubatkin *et al*. 2006). However, rather than simply keeping the units separate, other design configurations have been identified with greater focus on valuing the activity that mobilises, coordinates and integrates the dispersed exploitation-exploration endeavours across the segregated units for synergistic benefits (Jansen et al. 2009). 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-exploitation activities, they have to rely more on the ability of their senior management team (Khedhaouria *et al.* 2020; 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 routines (Lubatkin *et al*. 2006). Therefore, to the extent that the internal processes (and cognitive flexibility (Kiss *et al.* 2020)) of senior management facilitate ambidexterity (Tushman & O'Reilly 1996), the degree of senior management team's behavioural integration in SMEs is central to their ability to effectively cope with, and integrate, the different and contrasting needs occasioned by an ambidextrous orientation (Lubatkin *et al*. 2006). Similarly, team development and performance are enhanced by creative leadership (Rickards & Moger 2000).

At the firm level, senior management seek to achieve increased cost efficiency to ensure stable revenue (exploitation) and drive high performance through innovative ideas (exploration) (Gedajlovic, Cao, & Zhang 2012; March 1991). However, where success reinforces existing routines and leads to more exploitation of current competencies and less exploration of new competencies, firms fall into a success trap or a competence trap (Sitkin *et al*. 2011). On the other hand, when firms engage disproportionately on exploration at the expense of exploitation (i.e. develop new products, services and/or markets, but do not consolidate existing products, services and/or markets) they tend to fall into a failure trap (Levinthal & March 1993; March 1991). Ambidexterity, therefore, is often seen as management's ability to balance the tensions between exploitation and exploration streams within the firm (He & Wong 2004; Benner & Tushman 2003). We argue here that ambidexterity mediates the relationship between strategic leadership and firm performance in SMEs. This is because strategic leadership influences firm performance through developing and sustaining organisational ambidexterity. Therefore, the hypothesis below is developed:

H_4**:** Ambidexterity mediates the relationship between strategic leadership and firm performance.

V. RESEARCH METHODS

Data Collection

A structured survey questionnaire was employed to collect data for the research,[v] from July to September 2016. The Standard Industrial Classification (SIC) code of economic activities for accounting 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 (Financial Analysis Made Easy) database, using the UK SIC code 69201 for businesses exercising accounting and auditing activities. We used FAME because it is an extensive database of listed and private company information in the UK, sourced from Companies House (see, e.g. Wang et al. 2009). We also used data published by the industry journal, Accountancy Age to identify accountancy firms with annual income exceeding the SME threshold. Accountancy Age provides industry related data and has been used in previous research (e.g. Duff 2017). Data from this source was corroborated with data published by UK Companies House to ensure accuracy.

The survey instrument was administered in two ways. First, the questionnaire with covering letter was distributed to the fifty-seven firms (SMAFs) in attendance at the SMAFs conference[vi] in Birmingham (UK), organised by 2020 Innovation. Twenty-eight forms (questionnaire) were returned, twenty-five of which were complete and three incomplete. The fifty-seven firms were identified in the conference booklet and removed from the sampling frame. We then used simple random sampling to select the sample. Second, a postal survey was sent out to potential respondents in 1460 SMAFs across England, Scotland, Wales and Northern Ireland. 298 questionnaire were returned, giving a response rate of 20.41%. Of the 326 completed questionnaire (298 postal and 28 at the SMAFs conference), there were 315 usable observations, giving a net response rate of 20.8%.[vii]

Measures

It is argued that the use of available validated techniques for measurement scales could help reduce the extent to which measurement errors affect research findings (Malhotra & Grover 1998). Therefore, we operationalised the constructs by adapting measurement scales validated in previous studies as follows:

Independent variables

Exogenous variable

Strategic leadership (SL): Market orientation provides information about customers' needs and monitors and anticipates the efforts of competitors in providing customer value (Jimenez-Jimenez & Cegarra-Navarro 2007). Entrepreneurial orientation (EO) is key to firm success (Wang 2008). The role of strategic leadership – *a first-order DC – in the configuration and orchestration of higher-order DCs,* necessitates the use of a comprehensive measurement scale. Therefore, SL was operationalised by adapting items from Wang (2008); Jimenez-Jimenez & Cegarra-Navarro (2007); and Wang & Ahmed (2004).

Mediator variable

Organisational ambidexterity (AM): Benner & Tushman (2003) conceptualized ambidexterity as encompassing more than just product design, and proposed a two-dimensional definition, entailing differences between exploration and exploitation along an innovation's proximity to the firm's current technological/product trajectory.

The items for ambidexterity were adapted from Lubatkin *et al*. (2006) and Jansen, Van den Bosch, & Volberda (2009). These items, together, measure exploration and exploitation – the two components of ambidexterity.

Dependent variable

Firm performance (FP): Both financial and non-financial aspects of firm performance are measured, with items for financial and strategic performance adapted from Arend (2014); Schilke (2014); and Avci, Madanoglu, & Okumus (2011). We used the Partners' or Directors' (as the CEO or member of the senior management team) self-report of SMAF performance because objective data on the financial performance of many SMAFs, 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*. It is generally assumed that CEOs are knowledgeable informants, particularly with regard to their firms' performance (Lubatkin *et al*. 2006). Furthermore, a number of studies have successfully employed self-report data to analyse financial and operational performance (e.g. Lubatkin *et al*. 2006; Dess, Lumpkin, & Covin 1997). In all the three constructs, respondents were asked to respond on a 7 point Likert scale.

Control variables

Firm Size: Firm size impacts the EO-performance relationship, with the effect of EO on performance being greater in small organisations (Rauch *et al*. 2009). While enhanced scale and scope economies could enable larger firms to achieve operational efficiency, the larger firms are edged by smaller firms in strategic and operational flexibility (Park & Luo 2001). Firm size is determined by measuring the total number of employees in a SMAF, as reported by the Partner. Firm size has been controlled for in a number of studies because they can potentially influence performance (e.g. Sirmon & Hitt 2009; Lubatkin *et al*. 2006). Consistent with the definition of SMEs (European Commission 2003), firm size was categorised into three groups: micro (1-9 employees), small (10-49 employees), and medium (50-249 employees).

Firm Age: Although superior cost structures and manufacturing and delivery times are ensured by the greater degree of routine activities and more production experience are often attributed to older firms, these factors could equally inert the changes needed for

further enhancement of operational efficiency (Bierly & Daly 2007). While it is argued that the profitability of firms seems to decline as they grow older (Loderer & Waelchli 2010), older firms may be better positioned to enhance their operational performance (Cua, McKone & Schroeder 2001) considering they often have a larger resource base (Barney 1991). We control for firm age by considering the number of years of an SMAF's existence, as reported by the partner/director. A number of studies have employed firm age as control variable that may impact performance (e.g. Loderer & Waelchli 2010). We split firm age into the following age ranges (in years): ≤ 5, 6–20, and > 20.

Environmental dynamism: In situations of environmental volatility, organisational ambidexterity is relevant in helping organisations maintain strategic agility (Heracleous *et al.* 2017). While in dynamic environments an explorative rather than exploitative orientation to ambidexterity leads to better performance, in stable environments, higher performance will result from a balanced or exploitative-oriented approach (Good & Michel 2013; Gedajlovic, Cao & Zhang 2012). The variation in a firm's constructive balance between exploration and exploitation endeavours would depend on environmental conditions (dynamism, competitiveness) and performance measure desired (profits, market value) (Caspin-Wagner, Ellis, & Tishler 2012). Therefore, we asked respondents to indicate their perception of environmental dynamism.

The relationships between the constructs expressed by the hypotheses, and the effect of control variables on ambidexterity and firm performance are represented in figure 1.

Figure 1 [About Here]

Descriptive statistics

The number of staff employed by sample SMAFs is as follows: 202 SMAFs employ less than 10 staff, 88 SMAFs employ less than 50 staff, and 25 SMAFs employ less than 250 staff. The sample SMAFs had the following age distribution: up to 5 years were 36 firms; from 6 to 10 years = 45 firms; from 11 to 15 years = 35 firms; from 16 to 20 years = 26 firms; and greater than 20 years = 172 firms. The correlations between

the latent constructs are significant and positive. The descriptive statistics are presented in Table 1.

Table 1 [About Here]

We employed Little's MCAR test (Little 1998) using IBM SPSS 24,[viii] to determine if missing values were missing completely at random. At $\alpha = 0.05$, the results were $\chi^2 = 667.386$, DF = 624, and P-value = 0.111, indicating missing data were missing completely at random.

Non-Response Bias and Common Method Bias/Variance

Consistent with Collier & Bienstock (2007), we determined the existence of non-response error by comparing the first 25% respondents to the last 25% respondents. Using independent sample t-test (two-tailed), on a construct-by-construct basis, the results (at $\alpha = 0.05$) of Levene's test for the equality of variances are insignificant (strategic leadership (SL) = 0.633; Ambidexterity (AM) = 0.191), indicating the same variance of the score for the two. The results of t-test for equality of means (at $\alpha = 0.05$) illustrate both groups have no significant differences (SL = 0.665; AM = 0.512). These demonstrate the survey is not affected by non-response bias (error).[ix]

Furthermore, since our study is based on a single key informant approach, the results are potentially influenced by common method bias (Podsakoff *et al.* 2003). We minimised this bias by including a number of survey design measures. Common method variance is closely related to social desirability (Podsakoff *et al.* 2003); therefore respondent anonymity and confidentiality were ensured by not including respondents' names, name of firm or address on the postal survey. In addition, consistent with Grewal, Chakravarty & Saini (2010), different variations of Likert scales were employed, including "totally disagree/totally agree", "completely wrong/completely right", "strongly disagree/strongly agree". Further, following Podsakoff, MacKenzie, & Podsakoff (2012) and Podsakoff *et al.* (2003), Harman's single factor approach (Harman 1976) was employed as a post hoc test, to statistically test for the existence of common method variance (CMV). Using IBM SPSS 24, the principal component analysis shows a value of 35.3%, demonstrating that inter-item correlations are not solely influenced by CMV. Additionally, we tested for unobserved heterogeneity

through robust path analysis using FIMIX-PLS segmentation procedure (Sarstedt, Ringle, & Hair 2017) and full collinearity test (Kock 2015; Kock & Lynn 2012) in PLS-SEM, and obtained non-significant results (see Appendix on Robustness Checks).

VI. ANALYSIS AND RESULTS

We employed PLS-SEM to analyse the data using SmartPLS software *by Ringle, Wende, & Becker (2015).* PLS-SEM approach is appropriate for our study considering variance-based PLS-SEM yields consistent estimation outcomes although it demands fewer requirements than CB-SEM, making it a valuable technique for theory testing (Peng & Lai 2012; Gotz, Liehr-Gobbers, & Krafft 2010). Therefore, PLS-SEM was considered appropriate to this study.

Evaluation of Model Fit

Measurement models

The measurement models were validated by evaluating indicator reliability and internal consistency reliability (construct reliability). The absolute standardised loadings of the indicators of the measurement models ranged from 0.616 to 0.849. Hair, Ringle, & Sarstedt (2011) argue that indicators with loading between 0.4 and 0.7 should only be considered for removal from the scale if construct reliability would be improved by their removal. The indicator loadings are indicated in Table 2. We used composite reliability values to evaluate the degree to which manifest variables measure the latent construct to which they are assigned (Gotz, Liehr-Gobbers, & Krafft 2010). Composite reliability (CR) values: 0.880 [SL], 0.905 [AM], and 0.904 [FP] are considered satisfactory (Nunnally & Bernstein 1994). The statistics are shown in Table 2.

Table 2 [About Here]

Structural (mediation) model validation

We ascertain validity of the structural model by evaluating construct validity, comprised of convergent validity (AVE) and discriminant validity (Bagozzi, Yi, & Phillips 1991). The AVE values are larger than the acceptable threshold of 0.5 [SL = 0.514; AM = 0.577; FP = 0.613], validating the convergent validity for all three latent constructs (see table 2). We assess discriminant validity as follows: (i) the square root

of each construct's AVE is larger than its correlation with the other latent constructs (SL→SL = 0.717, SL→AM = 0.715, SL→FP = 0.578; AM→AM = 0.760; FP→FP = 0.783, FP→AM = 0.642), thus confirming the Fornell-Larcker (1981) criterion (Also see Henseler, Ringle, & Sarstedt 2015). (ii) HTMT ratios for SL→FP = 0.648; SL→AM = 0.827; AM→FP = 0.714. As the HTMT ratio for each pair of latent constructs is less than 0.85, discriminant validity is established (Kline 2011). Since all three criteria are validated, discriminant validity of the structural model is established. Thus, the measurement and structural models are validated.

Determining the effect of mediation

To evaluate the mediating effects of the latent construct, ambidexterity, we adopted Preacher & Hayes's (2008) procedure. The procedure involves bootstrapping in a two-step procedure[x] as follows: 1) we determine the significance of the direct effects without the mediator; 2) we determine the significance of indirect effects and associated t-values using the path coefficient when the endogenous/mediator variable is present.

The bootstrap settings used were: 5000 subsamples, parallel processing, no sign changes, complete bootstrapping, Bias-Corrected and Accelerated (BCa) bootstrap, two-tailed, and $\alpha = 0.05$. 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 mediating 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 & 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 internal estimates (Nitzl, Roldan, & Cepeda 2016).

6.1. Results

Hypothesis 1 predicts a positive relationship between strategic leadership and performance of SMAFs. The estimates of the model for the direct SL→FP relationship without the mediator shows a path coefficient with a strong effect ($\beta = 0.588$; $p < 0.001$),

providing clear support for Hypothesis 1. The $f^2 = 0.528$ also indicates a large effect of SL on FP.

Figure 2 [About Here]

In Hypothesis 2, we predicted a positive relationship between strategic leadership and organisational ambidexterity. The path coefficient supports this suggestion ($\beta = 0.715$; $p < 0.001$), thus supporting H_2. Hypothesis 3 predicts that there is positive relationship between organisational ambidexterity and firm performance. The path coefficient shows a positive relationship between the two constructs ($\beta = 0.467$; t-value = 8.321; $p < 0.001$) and clearly supports H_3. Furthermore, we predicted, in Hypothesis 4, a mediating effect of organisational ambidexterity on the relationship between strategic leadership and firm performance. To establish the mediating role of ambidexterity in the SL→FP relationship, a model that contains both direct and indirect effects between SL and FP is estimated. The parameter estimates for the direct path coefficient of SL→FP in the mediation model is statistically significant ($\beta = 0.244$, $p < 0.001$). The indirect relationship between SL→FP, and AM→FP, is also statistically significant (see results of hypotheses H_2 and H_3). See Figure 3.

Figure 3 [About Here]

We used the bootstrap estimates to calculate the standard deviation (standard error (PLS)), in order to determine the significance of the specific indirect effects of ambidexterity as a potential mediating variable. The results show a statistically significant specific indirect effect of ambidexterity on the SL→FP relationship (t-value = 7.687, $p < 0.001$). The 95% confidence intervals (0.333, 0.335) and bias-corrected confidence intervals (0.334, 0.337) also indicate a significant indirect effect.

In relation to the total effect, we calculate Variance Accounted For (VAF) to determine the size of the indirect effect. A VAF of less than 20% indicates no (or nearly zero) mediation, a VAF of between 20% and 80% indicates partial mediation, and a VAF of more than 80% demonstrates full mediation (Nitzl, Roldan, & Cepeda 2016; Hair *et al*. 2014). The parameters obtained for the mediation effects: (i) original sample: 0.334; sample mean = 0.336; standard error = 0.043. (ii) Confidence Intervals (studentised): 0.333 (at 2.5%), 0.335 (at 97.5%). (iii) Confidence Intervals Bias Corrected

(studentised): 0.002 (Bias); 0.334 (at 2.5%); 0.337 (at 97.5%). The direct path coefficient ($\beta = 0.244$, $p < 0.001$), the indirect path coefficient ($\beta = 0.334$, $p < 0.001$), and VAF = 57.78%, suggest that 57.78% of strategic leadership's effect on performance can be explained via the ambidexterity mediator. This result suggests that ambidexterity has a partial mediation effect on the SL→FP linkage, and supports Hypothesis 4. The results of the hypotheses tests are summarised in Table 3.

Table 3 [About Here]

Effects of Control Variables

The following parameter estimates for the effects of firm size were obtained: (i) micro firms: t-value = 0.034, $p > 0.10$; (ii) small firms: t-value = 1.019, $p > 0.10$; (iii) medium-sized firms: t-value = 1.912, $p < 0.10$. The results suggest that the aggregate effect of strategic leadership and ambidexterity on firm performance is not significantly impacted by the size of small and micro accountancy firms. However, at $\alpha = 0.10$ there is a significant aggregate effect on performance for medium-sized firms.

We control for the effects of firm age on performance by evaluating the significance of the effects of younger firms (up to 5 years old) and older firms (over 20 years old). The parameter estimates for the effects of SMAF age shows the following: (i) younger firms: t-value = 3.161, $p < 0.01$; (ii) older firms: t-value = 2.142; $p < 0.05$. This demonstrates a greater effect of age on the performance of younger firms than on the older firms. The estimates for the effect of perceived environmental dynamism on ambidexterity are: (i) Environment is dynamic: t-value = 0.120, $p > 0.10$; (ii) Environment is not dynamic: t-value = 0.103; $p > 0.10$. This suggests the perception of environmental dynamism does not significantly impact the ambidextrous orientation of SMAFs. The parameter estimates for the effects of SMAF age on ambidexterity: (i) Older firms: t-value = 0.687, $p > 0.10$; (ii) Younger firms: t-value = 2.990; $p < 0.01$. Thus, there is a significant effect of firm age on ambidexterity in younger accountancy firms. For the effects of SMAF size on ambidexterity, the parameter estimates are: (i) micro firms: t-value = 0.768, $p > 0.10$; (ii) small firms: t-value = 0.591; $p > 0.10$; (ii) medium-sized: t-value = 0.421; $p > 0.10$. Therefore, in the context of micro, small and medium-sized accountancy firms, firm size does not significantly impact their ambidextrous orientation. This suggests that accountancy firms all engage in

ambidexterity, with no significant difference between them, notwithstanding the resource constraints engendered by firm size. The result supports the view that exploration-exploitation activities are embedded in the daily routines of PSFs (e.g. Fu, Flood, & Morris 2016).

6.2. Discussion

This study demonstrates that micro, small and medium-sized accountancy firms engage in ambidexterity and that such ambidextrous activities make significant contribution to their performance. This is supported by the increased R^2 for the direct strategic leadership → performance relationship ($R^2 = 0.346$), in the simple model (i.e. without mediation variable), to strategic leadership → performance relationship ($R^2 = 0.441$) in the mediation model. Considering the R^2 values of the endogenous constructs signify the predictive power of the structural model (Lowry & Gaskin 2014; Peng & Lai 2012), the increase in R^2 shows additional benefits (increased value) to the firm, resulting from its ambidextrous activities. This is contrary to Voss & Voss's (2013) position that product ambidexterity does not have positive effects on the revenue of smaller and younger firms. Also, while other category of service firms engage in punctuated equilibrium (Geerts, Blindenbach-Driessen, & Gemmel 2010), SMAFs as professional services firms do engage in ambidexterity. This contrasts with the findings of previous studies that document lack of mechanisms that can help the attainment of strategic combinations of exploration and exploitation in SMEs because of the consequential complexities with senior management having to work at both strategic and operational levels (see e.g. Junni *et al.* 2013; Russo & Vurro 2010; Lubatkin *et al.* 2006; He & Wong 2004). Our results suggest that such combination could advance organisational strategy for firms' survival and long-term performance.

Further, in contextual ambidexterity, employees are encouraged by organisational context to choose how to divide their time between alignment- and adaptability-oriented activities (Gibson & Birkinshaw 2004). However, the organisational context in SMEs, especially resource constraints in SMAFs, does not permit management to give employees the liberty to choose their allocation of time to each of the paradoxical components of ambidexterity. This implies that in SMAFs, including those with middle management, strategic leadership does not only encourage and guide, but is also directly

and actively involved in the ambidextrous activities of the firm. Therefore, considering the results of previous studies (e.g. Rogan & Mors 2017; Zimmermann, Raisch & Birkinshaw 2015; Geerts, Blindenbach-Driessen, & Gemmel 2010; Knight & Cavusgil 2004; Gibson & Birkinshaw 2004), our study supports the need for cognitive flexibility of organisational leadership (e.g. Kiss *et al.* 2020), and provides further evidence that the process of establishing structures for ambidexterity is "equifinal" (e.g. Eisenhardt & Martin 2000; Gresove & Drazin 1997). This implies that practitioners should have, as well as encourage, diverse methods of exploration-exploitation activities in firms considering ambidexterity could be attained by various means. This further illustrates the importance of context in pursuing an ambidextrous orientation, and the need for cognitive ability in recognising contextual differences and relevance.

Additionally, our results show that in the accountancy practice sector, firm age does not lead to decreased performance resulting from inertia. This is contrary to earlier studies (e.g. Loderer & Waelchli 2010; Tushman & O'Reilly 1996). This result could be explained by the fact that older SMAFs are more likely to have a larger resource base necessary to exploit their existing expertise and explore new knowledge to enable them improve their performance. Also, older accountancy firms are likely to be more established, and their longevity may enable them to understand the market better than the younger firms. On the other hand, the lack of established structures in younger firms gives them the ability to rapidly adapt in highly volatile environments (Battisti & Deakins 2017), with greater motivation to use DCs (Arend 2014) than the older firms (Rogan & Mors 2017). Therefore, we argue that longevity, track record and established network for accountancy firms enable performance improvement even as they age.

Conclusions

We set out to establish the relationship between strategic leadership and firm performance and the extent to which ambidextrous orientation mediates that relationship in small and medium-sized accountancy firms *in the United Kingdom*. Our results indicate a significant direct influence of strategic leadership on firm performance. They also show that strategic leadership indirectly influences firm performance by creating a suitable environment for, and facilitating, the simultaneous engagement in exploitation and exploration activities in the firm. Importantly also, we

show that ambidexterity partially mediates the relationship between strategic leadership and firm performance. Our results have implications for practice and theory.

Managerial implications

We demonstrate that the performance of medium-sized accountancy firms is significantly impacted by firm size constraints. The result is consistent with the argument that the size of a small firm may prevent it from providing more diversified range of services from within the firm (Blackburn & Jarvis 2010). As a result, for accountancy firms, firm size is a limiting factor to both product/service and geographical diversification, an important ingredient in a firm's performance improvement. This contrasts with firms operating in other industries, e.g. manufacturing and high technology, where size could be a limiting factor to product diversification but not to geographic diversification. This is because although such firms may not be able to develop new products, they could engage in e-commerce and sell their products/services to customers worldwide. This is unlike for accountancy firms in which service delivery often require the physical presence of the accountant at client site. We suggest that networks and alliances could be the main vehicle for product and geographic diversification for small and medium-sized accountancy firms. Consequently, we contend that to improve financial performance, considerable managerial attention should be devoted to building alliances and networks in order to broaden the firm's geographic coverage and its product/service offerings. We make a contribution in this regard.

Theoretical implications

Kassotaki, Paroutis & Morrell (2019) contend that ambidexterity penetration at employee, middle management and senior management levels are interrelated. Our study shows that this interrelationship and its smooth functioning are dependent on the tone at the top of the organisation, i.e. the visionary and proactive posture set by the organisation's leadership despite resource constraints. This implies that the extent of exploitation-exploration activities engaged in by the firm would depend on the strategic direction pursued by the firm's leadership. Therefore, we show that sustainable performance improvement could be achieved if management optimises the level of both exploitation and exploration activities within the firm. We argue that because such optimisation is a factor of managerial cognitive abilities (also see Kiss *et al.* 2020; Junni

et al. 2015), the cognitive abilities of managers are an integral part of the dynamic capabilities. This implies that in evaluating the dynamic capabilities of leadership, social cognitive theory should also be employed. This is an important theoretical contribution.

We find that the perception of environmental dynamism does not significantly affect the extent of ambidexterity engaged by small and medium-sized accountancy firms. This is not consistent with prior research (e.g. Caspin-Wagner, Ellis, & Tishler 2012), and may be due to the need for accountancy firms to keep abreast of changes in accounting standards and legislation, in order to successfully render customised services to clients (also see Robertson, Scarbrough, & Swan 2003). This underscores a peculiarity of SMAFs. Therefore, our results support Greenwood et al.'s (2005, p.671) view that the peculiarity of the characteristics and challenges faced by PSFs 'undermine the relevance of theory generated from other types of organisations'. With this, we contribute to the body of knowledge on the subject.

The unique contributions of this study notwithstanding, it employed cross-sectional data which precludes a time difference as data is recorded only once. This limits the ability of the data to capture the incremental and long-term effects of strategic leadership on ambidexterity and firm performance, and of ambidexterity on performance of small and medium-sized accountancy firms. Also, the data used in this study was obtained from a single industry; therefore, caution should be exercised in generalising the results to other industries. These limitations provide additional avenues for future research. First, a longitudinal study could be conducted to determine if the partial mediation effect of ambidexterity identified in this study is maintained in the long-term. Such a study could also capture data from multiple respondents from the same accountancy or professional service firm. Second, future research could also identify the nature of ambidexterity in SMAFs, and investigate whether (and how) firm performance is impacted by such differences in the form (type) of ambidexterity employed.

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APPENDICES

Robustness Checks

Assessment of unobserved heterogeneity

To ensure that our model is free of unobserved heterogeneity, we employed two methods of robust path analysis by conducting the following tests:

1.) The FIMIX-PLS segmentation procedure was applied to the data, consistent with Sarstedt, Ringle, & Hair's (2017) systematic procedure for identifying and treating unobserved heterogeneity in PLS-SEM. Other studies have used FIMIX-PLS to uncover unobserved heterogeneity (e.g. Marques & Resis 2015). First, we calculated the minimum sample size needed to estimate each segment, to ascertain the maximum number of segments to extract (Sarstedt, Ringle, & Hair 2017). The results of a post hoc power analysis assuming an effect size of 0.15 and a power level of 80% suggest the minimum sample size requirement is 85 (Sarstedt *et al.* 2019), permitting a maximum of three segments to be extracted (N=315).

In initiating the FIMIX-PLS procedure, and consistent with Matthews *et al.* (2016), we assumed a one-segment solution, used the default settings for the stop criterion [10^{-5}=1.0E-5], the maximum number of iterations [5000], and the number of repetitions [10]. Then, with these same settings, the FIMIX-PLS was repeated for the second and third segments. The outcomes of the fit indices for the one- to three-segment solutions are unclear (see Table 4). Whenever the results of the fit indices show the same number of segments indicated by AIC3 and CAIC, the number of segments are likely to be appropriate (Sarstedt *et al.* 2011). However, in our analysis, AIC3 indicates a three-segment solution, whereas CAIC points to a one-segment solution.

Also, when used to determine the number of segments in FIMIX-PLS, AIC4 and Bayesian information criteria (BIC) normally perform well (Sarstedt *et al.* 2011). Although both criteria point to a one-segment solution which meets the minimum sample size requirements for each segment (Table 4), the Minimum Description Length with factor 5 (MDL5), proven to exhibit a marked tendency of underestimating the number of segments, equally points to a one-segment solution. Hair *et al.* (2016) argue that more segments should ordinarily be extracted than indicated by MDL5.

Table 4 [About Here]

Therefore, a specific segmentation solution cannot be clearly determined from the analyses, considering: (i) MDL5 points to the same number of segments as AIC4 and BIC; and (ii) AIC3 and CAIC point to different segment numbers. Thus, we consider that the level of unobserved heterogeneity is not critical, supporting the results of the analysis of the entire data set.

2.) We performed additional test for common method bias by conducting a full collinearity test proposed by Kock & Lynn (2012) as broad-based procedure for the simultaneous assessment of both vertical and lateral collinearity in PLS-SEM. Kock & Lynn (2012) show that using PLS algorithm, the procedure generates variance inflation factors (VIFs) for all latent variables in a model, with a VIF greater than 3.3 indicating an abnormal collinearity, and a signal that the model may be affected by common method bias. Our results are presented in the table 5 below:

Table 5: Full Collinearity (VIF) statistics

	Strategic Leadership	Ambidexterity	Firm Performance
Firm size	2.181	2.325	1.704
Firm age	1.873	2.293	1.649
Environmental dynamism	1.000	1.048	1.048

Figures greater than 3.3 indicate pathological collinearity (Kock 2015).

Kock (2015) and Kock & Lynn (2012) demonstrate that for a model to be considered free of common method bias, the full collinearity test should result in VIFs that are equal to or less than 3.3. Therefore, the results in table 5 above indicate that our model is not impacted by unobserved heterogeneity.

Figure 1: Conceptual Model of the Study

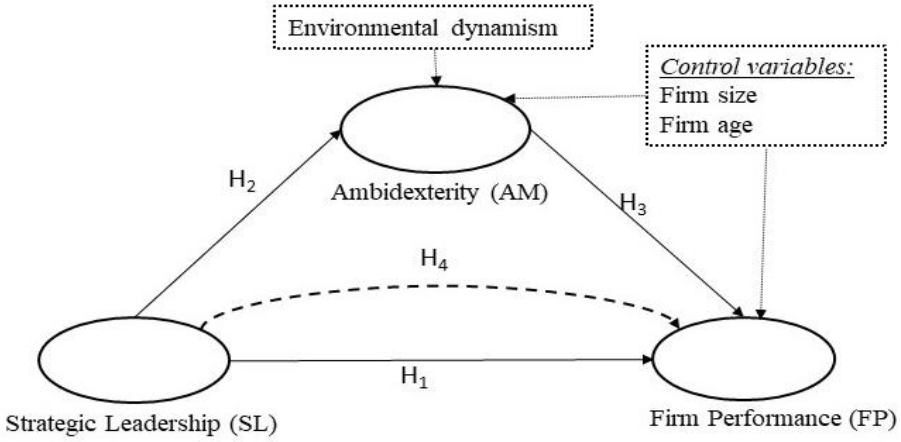
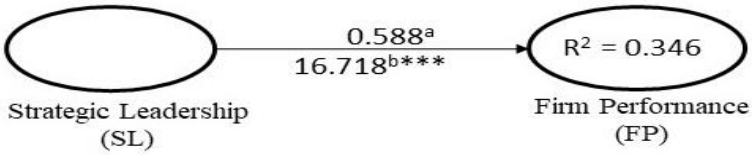
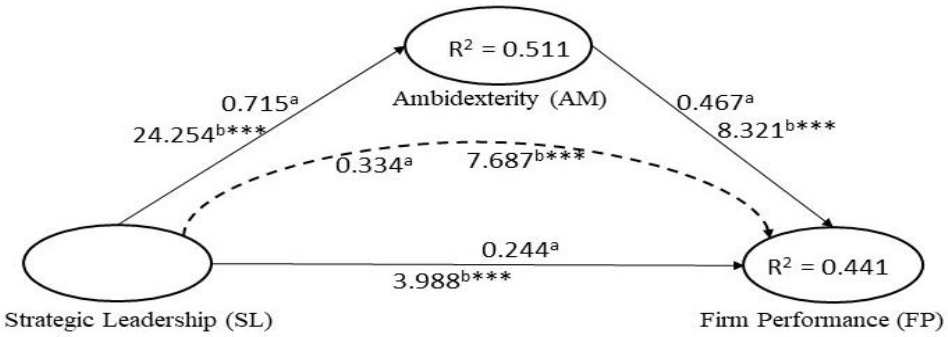


Figure 2: Path Coefficient & t-value for Direct Relationship: Strategic Leadership → Performance (without mediator variable)



a: Path coefficient
b: t-value of path coefficient
***p < 0.001

Figure 3: Path Coefficients & t-values for Relationships in the Mediation Model



a: Path coefficient
b: t-value of path coefficient
***p < 0.001

Table 1: Descriptive statistics and correlation matrix of key variables

	Mean	Std. Dev.	1	2	3	4	5
1. Firm Size	1.44	.637					
2. Firm Age	2.16	1.487	-.340**				
3. Environmental Dynamism	1.87	.819	.063	.023			
4. Strategic Leadership	4.77	.889	.296**	.033	.033		
5. Ambidexterity	5.02	.995	.243**	.131*	.016	.734**	
6. Firm Performance	4.68	.972	.205**	.170**	-.005	.573**	.601**

Correlations of SMAFs participating in the study; N = 315; * P < 0.05; ** p < 0.01 (2-tailed).

Table 2: Indicator loadings & model fit criteria

Measurement models and measurement items	**Standardised loadings**	***t*-values**
Strategic Leadership (α = 0.840; CR = 0.880; AVE = 0.514)[a] *(seven-point scale, anchored by 7 = "Totally agree"; 1 = "Totally disagree")*		
Our firm adapts quickly to a change in the business environment.	0.634	15.355
Our firm adopts a competitive position that aims to overtake the competitors.	0.792	34.823
Senior management (Partner(s)/Director(s)) believe the business environment requires wide-ranging measures to achieve the firm's objectives.	0.696	15.919
Our firm is willing to try new ways of doing things, and/or seek for new solutions.	0.730	22.844

Senior management are willing to take risks to seize or explore various promising growth opportunities.	0.751	27.089
Our organisation uses technologies to position itself ahead of competitors.	0.780	30.853
We encourage internal sharing of market information to understand consumer or competitor behaviours.	0.616	13.324

Ambidexterity (α = 0.878; CR = 0.905; AVE = 0.577)[b] (seven-point scale, anchored by 7 = "Completely right"; 1 = "Completely wrong")

Our firm searches for new ideas in knowledge and/or technology, by thinking creatively *[thinking 'outside the box'*].	0.769	30.657
We develop and commercialises services or products that are new to the firm.	0.744	23.860
Our company ventures into new market segments.	0.732	25.192
Our firm accepts demands that go beyond its existing services and/or products.	0.673	17.249
Our company continuously improves the reliability of its services and/or products.	0.818	35.933
We continuously improve the quality of our services or products to clients.	0.795	31.520
Our firm improves efficiency in the provision of services and/or products.	0.779	25.514

Firm performance (α = 0.873; CR = 0.904; AVE = 0.613)[c] (seven-point scale, anchored by 7 = "Strongly agree"; 1 = "Strongly disagree")

We have achieved high sales or revenue growth in our main services and/or products in the past three years.	0.862	50.932
Our firm has increased its profitability in the past three years.	0.740	20.860
Client satisfaction in our firm has increased in the past three years.	0.739	22.951
Client loyalty in our firm has improved in the past three years.	0.708	19.365

In the past three years, our firm has increased its market share.	0.849	43.456
Our firm has gained strategic advantages over its direct competitors.	0.784	31.762

[a] Adapted from Jimenez-Jimenez & Cegarra-Navarro (2007); Wang (2008); Wang & Ahmed (2004).

[b] Adapted from Lubatkin *et al*. (2006); Jansen, Van den Bosch, & Volberda (2006)

[c] Adapted from Arend (2014); Avci, Madanoglu, & Okumus (2011); Schilke (2014).

Table 3: Summary results of hypothesised tests

Hypothesised Paths	Expected sign	Standardised coefficient	*t*-value	Hypothesis test
H_1: SL → FP	+	0.588	16.718*	Supported
H_2: SL → AM	+	0.715	24.254*	Supported
H_3: AM → FP	+	0.467	8.321*	Supported
H_4: SL → FP *(with AM as mediator)*	+	0.244	3.988*	Supported

*p < 0.001

Table 4: Fit indices for one- to three-segment solutions

Criteria	Segment 1	Segment 2	Segment 3
AIC (Akaike's Information Criterion)	1,389.02	1,388.61	**1,372.39**
AIC3 (Modified AIC with Factor 3)	1,394.02	1,399.61	**1,389.39**
AIC4 (Modified AIC with Factor 4)	**1,399.02**	1,410.61	1,406.39
BIC (Bayesian Information Criteria)	**1,407.79**	1,429.89	1,436.19
CAIC (Consistent AIC)	**1,412.79**	1,440.89	1,453.19
HQ (Hannan Quinn Criterion)	**1,396.52**	1,405.10	1,397.88
MDL5 (Minimum Description Length with Factor 5)	**1,522.84**	1,683.00	1,827.36
LnL (LogLikelihood)	-689.512	-683.305	-669.20

EN (Entropy Statistic (Normed))	n/a	0.482	0.73
NFI (Non-Fuzzy Index)	n/a	0.526	0.71
NEC (Normalized Entropy Criterion)	n/a	163.139	84.51

Note: n/a: not available; numbers in bold indicate the best outcome per segment retention criterion.

Endnote

[i] This implies exploitation
[ii] This implies exploration
[iii] These include the development of novel thinking within the firm by managers using knowledge creation routines.
[iv] Especially its senior management.
[v] Data used for this study was collected as part of data collected for a wider study involving dynamic capabilities and firm performance.
[vi] The conference information booklet listed the names of all the fifty-seven SMAFs in attendance. In order to avoid duplication, these SMAFs were removed from the sampling frame before the sample for the postal survey was selected.
[vii] 1460 mail questionnaires and 57 questionnaires distributed at the Small Firms' conference. This makes a total of 1517 questionnaires.
[viii] Expectation Maximisation (EM) algorithm in IBM SPSS was used in performing the MCAR test.
[ix] The test was performed for the entire dataset of the research project, i.e., including other constructs not used in this paper.
[x] This two-step approach is consistent with Hoyle and Kenny (1999).