


Dynamic strategy: Investigating the ambidexterity–performance relationship



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Purpose: This study aims to determine whether organisations in emerging economic contexts demonstrate ambidexterity for sustainable performance in the long term and what the effects of environmental turbulence are on the ambidexterity and sustainable performance relationship.

Design/methodology/approach: This study used self-administered questionnaires and telephonic surveys. The sample consisted of profit-seeking organisations from many different industries within South Africa, including, but not limited to, manufacturing, business services, finance, hospitality and tourism, and retail and wholesale. The research was conducted during the 2017 financial year.

Findings/results: It was found that moderate to strong relationships exist between the two sub-dimensions of ambidexterity and sustainable performance. The findings depict a strong relationship between exploration and exploitation as the sub-dimensional constructs of ambidexterity, reinforcing existing literature on simultaneous exploration and exploitation. There was no statistically significant information, indicating that environmental turbulence moderates the ambidexterity and sustainable performance relationship.

Practical implications: Considering the strong positive relationship between the two sub-dimensions of ambidexterity and sustainable organisational performance, it is advisable for management of South African organisations to focus on ambidextrous strategies for sustaining performance in turbulent environments.

Originality/value: This study contributes to the limited body of knowledge investigating ambidexterity as a dynamic capability in an emerging economic context. Moreover, this study contributes to clarify the ambidexterity and sustainable performance relationship in terms of whether organisations can simultaneously explore and exploit and what type of relationship exists between ambidexterity and sustainable performance as previous studies delivered mixed results.

Keywords: sustainable performance; ambidexterity; dynamic strategy; dynamic capabilities; environmental turbulence.

Introduction

According to O'Reilly and Tushman (2004, p. 74):

The Roman god Janus had two sets of eyes – one pair focusing on what lay behind, the other on what lay ahead. General managers and corporate executives should be able to relate. They, too, must constantly look backward, attending to the products and processes of the past, while also gazing forward, preparing for the innovations that will define the future.

O'Reilly and Tushman (2004, p. 74) used this analogy to describe the ambidextrous behaviour required for organisations in the dynamic business environment that exists today. Growing competition is driving organisations to employ non-traditional management tools and techniques to stay competitively relevant and achieve sustainable success (Chukhray, 2012; Easterby-Smith, Lyles, & Peteraf, 2009; Hung, Yang, Lien, McLean, & Kuo, 2010). Business environments in the 21st century are classified as hypercompetitive, ambiguous and/or turbulent by many scholars (Deviatykh & Sobakina, 2014, p. 1; Easterby-Smith et al., 2009, p. 2; Peteraf, Di Stefano, & Verona, 2013, p. 1406).

Adeniran and Johnston (2012, p. 4089) state that dynamic capabilities are purposefully created or developed to enable an organisation to achieve the required sustainable performance in the long term when operating in turbulent environments. Management scholars and practitioners are

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increasingly focussing on the topic of dynamic capabilities, especially in terms of its contribution towards sustainable success (Dixon, Meyer, & Day, 2014; Teece, 2007). Hung et al. (2010, p. 286) note that dynamic capabilities signify how organisations compete in dynamic business environments by developing organisation-specific resources and capabilities. Management is required to alter and adapt their resource and capability allocation decisions on a continuous basis to satisfy their current market(s) and prepare for emerging business opportunities in the future (Prange & Verdier, 2011; Zhou & Li, 2010).

Such adaptations are needed as a result of turbulent business environments and continuously evolving market needs (Ambrosini & Bowman, 2009; Teece, 2010). The ability to adapt to current, changing markets and seek out or create possible new markets is the essence of ambidexterity employed as a dynamic strategy (Dutta, 2012). Raisch and Birkinshaw (2008, p. 393) argue that despite studies concerning organisational ambidexterity expanding at rapid rates, there is limited empirical research on the relationship between ambidexterity and long-term performance. It is also evident in the literature that there is a shortage of empirical research investigating the relationship between dynamic capabilities (such as ambidexterity) and sustainable long-term performance within an emerging economic context (Adeniran & Johnston, 2012; Ambrosini & Bowman, 2009; Deviatykh & Sobakina, 2014; Karabag & Berggren, 2014; Pablo, Reay, Dewald, & Casebeer, 2007; Raisch & Birkinshaw, 2008).

This study was conducted in the emerging economic context of South Africa and will contribute to the literature investigating the need for dynamic capabilities in emerging economic contexts (Ambrosini & Bowman, 2009). Emerging economies differ from developed economies in a few important respects. Firstly, they provide possible investors with greater profit earning opportunities. Secondly, emerging economies have a much lower gross national income on a per capita basis. Thirdly, there is a greater reluctance towards accepting investment from other countries. Lastly, emerging economies often have high degrees of exchange rate volatility (Ioana-Cristina & Gheorghe, 2014, pp. 40–41). Emerging economies are typically characterised by constant government involvement aimed at encouraging foreign direct investment, a diverse number of fast-growing markets and high environmental uncertainty because of the dynamic operating environment, thus providing the perfect ground for validating and challenging current business models and organisational theories (Xu & Meyer, 2013). Empirical evidence from emerging economies is important, given the value that they contribute to the global economy (Keen & Wu, 2011). Thus, scholars will benefit from this research as it contributes to the body of knowledge in the growing field of dynamic capabilities, providing empirical evidence from an emerging economic context.

Junni, Sarala, Taras and Tarba (2013, p. 310) note that although there are a few studies that have investigated the ambidexterity and sustainable performance relationship,

the results remain mixed and more research is needed in this regard. For example, some studies have found a positive relationship, some studies have found the relationship to be contingent, some studies have found that a negative relationship exists and some have found no existing relationship (Junni et al., 2013). Junni et al. (2013, p. 310) recommended further research on the ambidexterity–performance relationship to investigate moderators on that relationship such as the environment within which organisations deploy their ambidextrous strategies.

Thus, the research problem is that organisations need the ability to adapt to current, changing markets and seek out or create possible new markets in turbulent environments, such as South Africa, for sustainable performance. Research linking the ambidexterity and sustainable performance relationship is lacking, given that understanding this relationship is important for management and scholars in today's dynamic business environment, especially in the context of emerging economies. The relevance arises from the many external forces and influences in dynamic environments that organisations face. These external forces and influences have an impact on strategic decisions, whereas understanding the importance of ambidexterity will equip organisations for survival and possibly sustainable performance (Hung et al., 2010; Ludwig & Pemberton, 2011).

Literature review

Sustainable performance

For the purposes of this study, sustainability refers to optimal performance achieved and maintained by an organisation over time (Bansal & DesJardine, 2014). In other words, sustainability is the ability to uphold or maintain an action, process or system over an extended period of time for financial gain (Bansal & DesJardine, 2014; De Oliveira Cabral, 2010). The key question is: 'how can an organisation achieve optimal performance in the present while maintaining such performance over time?' Performing sustainably is an indication of effective management over time by means of achieving short- and long-term goals (O'Reilly & Tushman, 2008; Tang & Liou, 2010). In addition, organisations continuously need to optimise and refine their strategy to ensure that their current performance is sustainable, while simultaneously investigating and innovating to meet current and future demands (Martini, Laugen, Gastaldi, & Corso 2013). De Oliveira Cabral (2010, p. 8) states that sustainable practices in organisations can be defined as 'meeting the needs of the present, without compromising the ability of future generations to meet their own needs'.

In the ever-changing, turbulent business environment, resources, competences, processes, contexts and industry dynamics are constantly changing (Katkalo, Pitelis, & Teece 2010). These changes affect the strategy, structures and systems the organisation should align with to survive, and possibly secure sustainable performance in both the short and long terms (Hung et al., 2010; Teece, 2012). However, the

ability to adapt successfully to environmental changes does not secure sustainable long-term performance. Sustainable long-term performance requires building capabilities that will enable the organisation to satisfy these multiple demands simultaneously (Bonn & Fisher, 2011). Understanding how to build and manage these capabilities in itself is already a challenge (Bonn & Fisher, 2011; Epstein & Buhovac, 2014). Hence, organisations are required to build dynamic capabilities that could complement strategic responsiveness to change while meeting both current and future needs.

Dynamic capabilities

Helfat and Peteraf (2003, p. 999) define ordinary capabilities (hereafter referred to as 'capabilities') as 'an organisation's ability to utilise resources, as well as coordinate and perform multiple tasks all in pursuit of a specific outcome'. Capabilities are developed and refined internally to assist with efficient performance of current activities (Teece, 2012). These capabilities enable the organisation to perform in a constant manner, on an ongoing basis, with fairly similar techniques and more or less a set scale to maintain delivery of existing products and services to the same market population (Wilden, Gudergan, Nielsen, & Lings, 2013).

Teece (2007, p. 1319) argues that in addition to capabilities, an organisation must build capabilities that will enable it to 'create, extend, upgrade, protect and keep' an exclusive asset base on a continuous basis. This is the essence of what dynamic capabilities have to offer organisations. Dynamic capabilities influence the organisation's resource base in such a manner that the organisation's resources and capabilities become valuable; this allows the organisation to meet immediate demands and current needs, thus improving the organisation's effectiveness (Adeniran & Johnston, 2012). Dynamic capabilities are layered on top of capabilities, constantly improving and changing the organisation's procedures and processes to align the internal organisation with its strategic goals (Hung et al., 2010).

Dynamic capabilities can be defined as higher level capabilities that determine the organisation's ability to integrate, build and reconfigure internal and external resources and capabilities to address, and possibly shape, rapidly changing business environments (Katkalo et al., 2010; Teece, 2007, 2012). Furthermore, dynamic capabilities enable the organisation to align and realign its resources and capabilities over time to pursue opportunities in the changing business environment (Katkalo et al., 2010).

Hung et al. (2010, p. 286) opine that dynamic capabilities are developed internally to aid survival as a result of dynamic and turbulent business environments that an organisation faces and will continue to face. Ambidexterity (a type of dynamic capability) allows the organisation to simultaneously satisfy multiple demands from the current and future markets that the organisation serves (Wang & Rafiq, 2014). It allows the organisation to effectively respond to changes in

the business environment and deploy a dynamic strategy (O'Reilly & Tushman, 2013).

Ambidexterity

Ambidexterity is defined as the power of an individual to use both hands with the same skill level and is widely used as a metaphor to describe an organisation's flair for managing the paradox of exploitation and exploration simultaneously (Martini et al., 2013). Duncan (1976, p. 172), the first scholar to apply the ambidexterity definition in an organisational context, stated that an ambidextrous organisation must be able to excel at both exploitation and exploration and be strategically responsive in making major changes. At the same time, such an organisation must be concerned with carrying out its activities in the most efficient manner.

One of the first thought leaders on ambidexterity (March, 1991, p. 71) noted that exploration may include 'things captured by terms such as search, variation, risk taking, experimentation, play, flexibility, discovery, innovation'. Exploitation may include factors such as 'refinement, choice, production, efficiency, selection, implementation and execution' (March, 1991 p. 71). Thus, exploitation refers to an organisation's ability to identify and pursue opportunities, to gain knowledge and learn, to reduce risk and to refine and adapt assets and capabilities for optimal performance in current markets (Martini et al., 2013; Prange & Verdier, 2011). On the other hand, exploration includes activities such as experimentation, play and variation with resources and capabilities, flexibility, discovery, reconfiguration and innovation (Martini et al., 2013; Prange & Verdier, 2011). Thus, exploitation consists of refinement, improvement and incremental innovation for short-term performance, whereas exploration consists of transformation, novelty and radical innovation for long-term performance (Dixon et al., 2014; Wang & Rafiq, 2014).

The simultaneous exploitation of existing capabilities and exploration of new capabilities is key to organisational survival, prosperity and sustainable performance (He & Wong, 2004; March, 1991; Martini et al., 2013; Raisch, Birkinshaw, Probst, & Tushman, 2009; Tushman & O'Reilly, 1996; Wang & Rafiq, 2014). Strategically, for an organisation to survive and achieve long-term sustainable success, it has to possess resources and capabilities that could enable it to compete in its current markets, as well as the ability to assess and reconfigure resources that will enable the organisation to adapt to evolving markets and technological changes (O'Reilly & Tushman, 2008).

Organisations are, however, faced with a dilemma. He and Wong (2004, p. 481), March (1991, p. 71) and Wang and Rafiq (2014, p. 63) note that returns on exploration are associated with uncertainty and variability and are distant in time, whereas returns on exploitation are more certain and immediate. Because of the uncertainty of outcomes, the risk involved in long-term planning and the long time span of

returns on exploration activities, it is common for organisations to favour exploitation activities (Bansal & Des Jardine, 2014; Lavie et al., 2010). The hunt to achieve a competitive, yet short-term advantage in the current marketplace does not guarantee sustainable, superior performance in the future (Ambrosini & Bowman, 2009; Chandrasekaran, Linderman, & Schroeder, 2012; Deviatykh & Sobakina, 2014; O'Reilly & Tushman, 2008; Tang & Liou, 2010). Therefore, Bansal and Des Jardine (2014, p. 71) state that business sustainability is improved by organisations responding to short-term needs without jeopardising their ability to meet future needs.

The notion of the success trap depicts the negative outcome of short-term thinking on sustainable performance. The success trap ensues when an organisation becomes so vested in its current strategy of refinement and efficiency that it is unable to adapt to turbulent environmental conditions, resulting in poor long-term performance (Junni et al., 2013). Keeping products and services flexible and ready to adapt to changing customer demands is where strategy and sustainability meet (Bansal & DesJardine, 2014). Thus, an organisation's long-term survival indicates its strategic ability to adapt to the changing business environment and its ability to innovatively plan strategies for the long term (Wilden et al., 2013). Nevertheless, becoming caught up in innovation could also have a detrimental effect on organisational performance.

Focussing on radical innovations to satisfy customer demand and neglecting opportunities that could currently be exploited for improved short-term performance is known as the failure trap, which could lead to disastrous outcomes (Chandrasekaran et al., 2012; Junni et al., 2013; Simsek, Heavey, Veiga, & Souder, 2009). Junni et al. (2013, p. 300) explain that organisations often become too fixated on producing new innovations that they neglect fully developing their original innovations, resulting in underdeveloped ideas that could have contributed to their revenue streams.

Organisations must equip themselves to compete in their current markets efficiently and meet current needs, while simultaneously experimenting and innovating for emerging or unexplored markets (He & Wong, 2004; Wang & Rafiq, 2014). This hedges the organisation's strategy against turbulence in the business environment as the organisation is able to respond to current and new or changing needs.

In the short term, organisations exploit current opportunities, while exploration of future opportunities produces innovative ways to adapt to the changing business environment in the long term (Chandrasekaran et al., 2012). Aligning the business strategy to the organisation's ambidextrous capability allows it to adapt to changes in the environment. It demonstrates that the organisation has successfully adopted a dynamic strategy to ensure sustainable performance. Figure 1 demonstrates the interaction between exploration, exploitation and the organisation's strategic decisions.

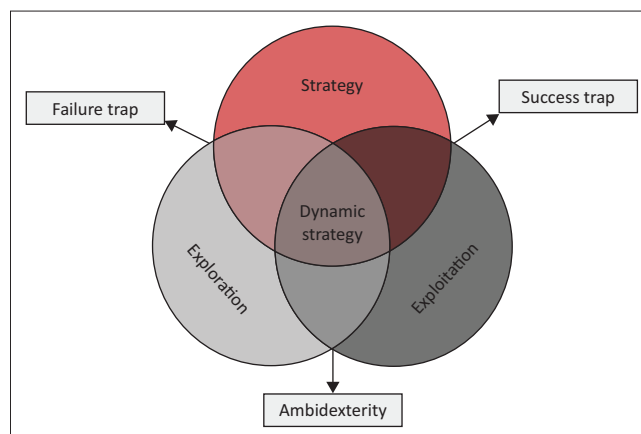


FIGURE 1: Exploration, exploitation and strategy.

Throughout the literature, it is noted that the demands of developing and implementing exploitation strategies for short-term performance against those of exploration strategies for long-term performance are considered to be paradoxical (Andriopoulos & Lewis, 2009; Martini et al., 2013; Smith, Binns, & Tushman, 2010; Wang & Rafiq, 2014). Researchers argue that exploration and exploitation form part of a continuum that requires trade-offs to find a balance (He & Wong, 2004; March, 1991; Martini et al., 2013; Peteraf et al., 2013; Wang & Rafiq, 2014).

Traditionally, it was argued that an 'either/or' approach, emphasising the requirements of trade-offs between the paradoxical logics, was required for organisational success in ambidextrous behaviour (Smith et al., 2010; Simsek et al., 2009; Wang & Rafiq, 2014). A balance between exploration and exploitation is especially important in organisations with limited resources or restricted external resources (Junni et al., 2013). Lavie et al. (2010) argue that for organisations to manage the required trade-off between explore and exploit, they have to switch from exploitation to exploration and vice versa, much like a pendulum, over time. The different ways in which organisations can implement these trade-offs to find the appropriate balance may require strategies such as temporal separation or structural separation (Lavie et al., 2010; Martini et al., 2013; O'Reilly & Tushman, 2013; Simsek et al., 2009; Wang & Rafiq, 2014).

Temporal separation in this instance refers to a continuous cycle between exploration and exploitation where the organisation focusses solely on one activity at a time, shifting to the other activity at a later stage (Lavie et al., 2010). In other words, at one moment, the organisation will be engaged in exploitation activities, and over time, the organisation will switch to exploration activities, like a pendulum swinging from one side to the other (Smith et al., 2010).

Structural or domain separation distinguishes between exploitation and exploration activities in different organisational units (Raisch et al., 2009; Wang & Rafiq, 2014). Structural separation allows organisational units to focus on the specific needs of either exploration or exploitation

without disregarding the other (Gibson & Birkinshaw, 2004). A different way in which an organisation can utilise structural separation is through alliances, wherein each organisation has a responsibility to either explore or exploit (O'Reilly & Tushman, 2013). However, structural separation bears the risk of increasing the costs involved in coordinating activities between the separate organisations (Simsek et al., 2009; Wang & Rafiq, 2014). Structural separation would be advisable for organisations working towards a balance, where both activities can be carried out separately in multiple units (Lavie et al., 2010).

However, switching focus between exploration and exploitation would lead to implement only one or the other strategy at a specific point in time, which could lead to either the success or the failure trap. Furthermore, O'Reilly and Tushman (2008, p. 192) found that pursuing these different strategies by achieving a balance between the two paradoxical activities will result in average performance in both exploration and exploitation activities, resulting in the organisation 'being stuck in the middle'.

In line with recent literature, this study argues that the benefits of the simultaneous pursuit of exploration and exploitation (in the sense that the organisation excels at both simultaneously) are more rewarding than finding a balance or switching between the two (Gibson & Birkinshaw, 2004; O'Reilly & Tushman, 2008, 2013; Raisch et al., 2009; Simsek et al., 2009; Wang & Rafiq, 2014). This study agrees with and adopts the 'both/and' paradoxical thinking of implementing two vastly different strategies simultaneously to reap the benefits from their synergies (Andriopoulos & Lewis, 2010; Gibson & Birkinshaw, 2004; Smith et al., 2010). Consequently, to excel and achieve superior long-term performance in relation to competitors, an organisation must demonstrate ambidexterity (Junni et al., 2013).

Ambidexterity is defined as the simultaneous pursuit of both exploration and exploitation as is noted by many scholars (Gibson & Birkinshaw, 2004; O'Reilly & Tushman, 2013; Raisch et al., 2009). When a dynamic capability such as ambidexterity and a good adaptable strategy is combined, the organisation can satisfy the current market needs while attending to competitive opportunities (Teece, 2012). It would therefore be sufficient to conceptualise ambidexterity in an organisational setting as nothing less than a dynamic capability that simultaneously reconciles paradoxical strategies (Martini et al., 2013). In light of the literature discussed above, it is posited that:

H₁: There is a positive correlation between ambidexterity and sustainable organisational performance.

H₂: There is a negative correlation between exploration and exploitation.

Dynamic strategies and dynamic environments

Turbulence can be accepted as given in most market environments as they become more uncertain and

unpredictable (D'Aveni, Dagnino, & Smith, 2010). Strategic adaptability will enable the organisation to outperform its competitors in the turbulent business environment, especially if it is combined with a dynamic capability such as ambidexterity that supports the organisation's strategic adaptability (Adeniran & Johnston, 2012; Tamayo-Torres, Gutierrez-Gutierrez, & Ruiz-Moreno, 2014). The rationale behind this is that adapting to change while simultaneously exploring and exploiting will enable the organisation to react to and satisfy current needs much quicker, as well as preparing and innovating for future needs (Wilden et al., 2013). It provides the organisation with a certain agility when it comes to serving the market, allowing it to adopt a dynamic strategy to survive the continual changes in the business environment.

Throughout the literature, dynamic business environments in the 21st century have been classified as turbulent, uncertain, volatile and/or hypercompetitive (Chermack, Bodwell, & Glick, 2010; Deviatykh & Sobakina, 2014; Easterby-Smith et al., 2009). Dynamic environments are largely unpredictable and subject to change at any moment (Li & Liu, 2014; Ogilvie, 1998). To compete in dynamic environment, an organisation's strategy must be able to change with the environmental changes at any given moment (Li & Liu, 2014). Emerging economies operate within the constraints of an even more dynamic environment than developed economies. This can be illustrated by the fast pace by which market changes occur in emerging economies. Emerging economies have changed dramatically over the past 20 years as a result of the numerous economic, demographic and geopolitical developments that have occurred (Li & Liu, 2014; Zhou & Li, 2010).

Emerging economies are considered to have highly turbulent business environments because of a vast number of factors playing a role in the market, as well as the growing nature of emerging markets (Zhou & Li, 2010). In environments characterised by dynamism, dynamic capabilities can prove to improve an organisation's response to strengthen its performance (Wilden et al., 2013). Emerging economies may experience large-scale and immense changes amongst their foundations, including their economies, governments and industry environments, from which rigorous strategic challenges can arise for opportunity-seeking businesses. Because of South Africa being quasi-industrialised and its infrastructure running acceptably, South Africa can be considered one of the leading emerging economies in Africa (Bhaumik & Gelb, 2005).

Empirical studies in emerging economies are important for the academic field because there is a lack of unequivocal findings in emerging economic contexts (Zhou & Li, 2010). Seeing that environments in emerging economies are constantly changing and discontinuous, strategies need to be dynamic, which is flexible and adaptive to change for the organisation to compete (D'Aveni et al., 2010; Zhou & Li, 2010). It is therefore important to properly assess and

orientate the organisation to the environment, to enable it to be strategically adaptable as the environment evolves and changes, which necessitates the development of dynamic capabilities such as ambidexterity (Li & Liu, 2014; Wilden et al., 2013). Hence, it is posited that:

H₃: The relationship between ambidexterity and sustainable organisational performance is moderated by environmental turbulence.

Methodology

This study statistically analysed the ambidexterity, performance and environmental dynamism constructs. The aim of this study is therefore to empirically investigate and report on observations made from the primary data collected on the sample, and then to apply the findings to the larger population.

To report on the relationships investigated, a cross-sectional research was used. For data collection, the researchers and designated field workers used direct communication in the form of telephonic surveys as well as indirect communications through emails containing a hyperlink to the self-administered survey to collect the primary data from participants in their respective field settings.

The proposed study's target population consists of profit-seeking organisations from various industries operating within the South African business environment, including, but not limited to, manufacturing, business services, finance, hospitality and tourism, education, healthcare, and retail and wholesale. The data were collected during the 2017 financial year. The unit of analysis for this study is the organisation because the organisation's ambidextrous dynamic capability was measured in relation to other constructs such as environmental dynamism, and its effect on the organisation's performance.

A non-probability sampling method, more specifically, convenience sampling, was used to obtain a sample for the study. This study had no pre-specified or known probabilities or an accurate sampling frame available for selecting the sample (Kotzé, 2015; Williams, Sweeney, & Anderson, 2012). This study faced limited monetary resources as well as a limited time frame within which to collect the data (Bryman & Bell, 2015; Williams et al., 2012). A total of 157 completed surveys were successfully collected, with a minimum of 150 usable answers for each question. The data for this study were collected between July and August 2017. No incentives were provided to motivate individuals to participate in the study.

Table 1-A1 (Appendix 1) presents the link between the research objectives, hypotheses, constructs involved in evaluating the hypotheses and measurement items used in the final questionnaire (Appendix 3). A questionnaire breakdown is presented in Appendix 2 (Table 1-A2).

Ethical consideration

Ethical clearance to conduct the study was obtained from the Research Ethics Committee of the Faculty of Economic

and Management Sciences, University of Pretoria (Ethical Clearance Number: EMS015/17).

Results

Factor analysis and internal reliability

The Kaiser–Meyer–Olkin measure of sampling adequacy for the four constructs measured provided results above the recommended threshold of 0.6, indicating that the constructs are reliable (Pallant, 2011). Furthermore, the Bartlett's test of sphericity for all the measures of the constructs was found to be statistically significant ($p < 0.000$). Thus, for each of the constructs, a factor analysis was conducted to determine the internal reliability of the measurement items used to collect results.

For the environmental dynamism construct, there was one factor produced based on the eigenvalue of 2.209 being greater than 1 (Fabrigar & Wegener, 2014). Unidimensionality was confirmed for this construct as only one factor was delivered. The internal reliability of the construct presented at $\alpha = 0.725$ (Table 1), which is above the acceptable threshold, is considered as satisfactory (Chuang, 2004).

The first eigenvalue of 3.773 for sustainable performance resulted in one factor extraction proving unidimensionality of the construct. The Cronbach's alpha value for sustainable performance resulted in 0.881 (Table 1), which is above the acceptable threshold and considered satisfactory.

Ambidexterity was divided into two sub-dimensions. For the exploration sub-dimension, one factor was extracted after only one eigenvalue resulted in a value greater than 1, proving unidimensionality (Fabrigar & Wegener, 2014). For the second sub-dimension of ambidexterity, exploitation, there was one eigenvalue of 2.313 which resulted in one factor extraction, proving that the sub-dimension is unidimensional. After rotating the factor, the overall internal reliability of the constructs was acceptable at 0.808 and 0.747, respectively (see Table 1).

Correlations between measured items

Hypotheses 1 and 2 (Table 1-A1) deal with correlations between the constructs investigated in this study. Both of these hypotheses are directional (one-tailed) hypotheses; however, they were tested at a 1% level of significance ($\alpha = 0.01$) as two-tailed hypotheses. This was performed in order to avoid committing a type II error (β) of not rejecting the null hypotheses, when statistically it cannot be accepted (Cooper & Schindler, 2014).

TABLE 1: Reliability statistics for the five dimensions measured.

Dimension	No. of items	Cronbach's alpha
Environmental dynamism	4	0.725
Sustainable organisational performance	6	0.881
Exploration	4	0.808
Exploitation	4	0.747

Linearity exists between the two variables measured in each correlation test as was determined by scatterplots. Similarly, bell curves in the correlations demonstrate that the variables tested are normally distributed (post-completion of the factor analysis). The assumptions were satisfied, and Pearson's product-moment correlation test was used to evaluate the correlations between the variables (Green & Salkind, 2013; Pallant, 2011).

The correlation computed amongst the five dimensions measured is presented in Table 2-A1. All the correlations in Table 2-A1 have significance levels below $p = 0.005$, and it is shown that correlation coefficients of 0.388 and above resulted. Cohen (1988) (cited in Faul, Erdfelder, Buchner, & Lang, 2009, p. 1152) reported that relationships can be depicted as 'large', 'medium' and 'small', demonstrating the strength of the relationship. In accordance with this, the relationships found in this study are reported as 'strong' as a synonym for 'large', 'moderate' as a synonym for 'medium' and 'weak' as a synonym for 'small'.

For the first relationship measured between ambidexterity and sustainable organisational performance, statistics concurs that there is indeed a moderate positive relationship ($r(150) = 0.543$), between exploration and sustainable performance. Similarly, a moderate positive relationship ($r(150) = 0.504$) between exploitation and sustainable organisational performance is reported. The null hypothesis was subsequently rejected.

The second relationship tested the correlation between the two sub-dimensions of ambidexterity, exploration and exploitation. The correlation of $r(149) = 0.786$ demonstrates a significantly strong relationship between the two sub-dimensions. It can be deduced that an increase in one sub-dimension of ambidexterity would lead to an increase in the other sub-dimension, holding true to the theory of ambidextrous behaviour in organisations where organisations are able to simultaneously explore and exploit. Thus, the null hypothesis can be rejected.

Moderation of the ambidexterity–performance relationship

Hypothesis 3 (Table 1-A1) deals with the moderation by environmental turbulence of the ambidexterity and sustainable organisational performance relationship. Hypothesis 3 was tested at a 5% level of significance ($\alpha = 0.05$) as a two-tailed hypothesis. As noted above, there is a clear relationship between the two sub-dimensions of ambidexterity and sustainable organisational performance. A multiple regression model was used to examine what the moderating effect of environmental turbulence will be on the ambidexterity and sustainable performance relationship. The dependent variable in this analysis was sustainable organisational performance and the independent variables were exploration, exploitation and environmental dynamism.

Environmental turbulence was examined as a moderator of the relationship between ambidexterity and sustainable

performance. The interaction between exploration and environmental turbulence proved significant with a value of 0.780, which exceeds the 95% significance level ($\alpha = 0.05$). This indicated that there is not a significant explanation for any moderation of environmental turbulence on the ambidexterity and sustainable organisational performance relationship. Therefore, the null hypothesis stating that environmental turbulence has no moderating effect on the ambidexterity and sustainable performance relationship could not be rejected.

Conclusion

The objective of this study was to investigate the relationship between ambidexterity (a dynamic capability) and sustainable organisational performance. It delivered positive results, proving this relationship exists. This indicated that organisational ambidexterity, known in this study as simultaneous exploration and exploitation, and sustainable long-term performance were positively related. Management is advised to look into adopting the ambidextrous strategy of simultaneous exploration and exploitation for improved short-term performance that can be sustained over the long term because of dual focus on current and future market opportunities.

This study further investigated whether South African organisations explore and exploit simultaneously. The results obtained after the empirical investigation confirmed that there was a strong positive relationship between exploration and exploitation. The results reciprocated the findings of Andriopoulos and Lewis (2009, p. 709), Martini et al. (2013, p. 10) and Wang and Rafiq (2014, p. 71), who argued that demonstrating exploitation to refine and optimise current business operations, while simultaneously exploring novelty and innovation to prepare for future markets, is a key capability for organisations in dynamic and changing environments. The results offer South African organisations meaningful strategic intelligence to support the development of dynamic strategies.

The effect of turbulent business environments on the ambidexterity and sustainable performance relationship was investigated. The findings of this study contradicted that of Eisenhardt, Furr and Bingham (2010), Li and Liu (2014) and Zhou and Li (2010). There was no significant moderation displayed by the turbulence in the environment on the ambidexterity and sustainable performance relationship. There may be many reasons for these findings. It is advised that future studies place more focus on this, specifically in the emerging market context.

A few limitations were faced by the study, which are worth taking note of. A non-probability sampling method was used because of access limitations, which means that the results of the study should be applied to the population with caution because of the lack of an accurate sampling frame. This study used self-administered and telephonic surveys,

which introduced some methodological limitations in the form of survey errors. The study attempted to minimise these errors by using two different data collection techniques, the completion of pre-testing of the data collection instrument and the use of field workers and telephonic surveys. Regardless of the limitations of this study, it is worth noting that even though small, the research contributed to building a path of understanding regarding ambidexterity in South Africa's dynamic and complex organisational environment.

Many scholars argued that there is a shortage of empirical investigations into the relationship between dynamic capabilities, such as ambidexterity, and sustainable performance in emerging economic contexts (Adeniran & Johnston, 2012; Ambrosini & Bowman, 2009; Deviatykh & Sobakina, 2014; Karabag & Berggren, 2014; Pablo et al., 2007; Raisch & Birkinshaw, 2008). However, previous researchers noted mixed results regarding the ambidexterity and sustainable performance relationship and called for clarification on this relationship (Junni et al., 2013).

This study found that there was a positive relationship between ambidexterity as a dynamic capability and sustainable organisational performance. Furthermore, this study was conducted in South Africa, which is known as an emerging economy. Hence, the contribution of this study gratifies the need for empirical evidence between dynamic capabilities and sustainable performance, as well as the need for empirical studies from emerging economies. This study also contributed to the clarification of the ambidexterity and sustainable performance relationship.

This study has furthermore confirmed that simultaneous exploration and exploitation is indeed possible and recommended in terms of the benefits towards sustainable organisational performance. Junni et al. (2013, p. 310) also recommended that there should be more investigation into the effect of moderators on the ambidexterity–performance relationship. This study attempted to investigate this effect by choosing environmental dynamism as a moderator of the ambidexterity and sustainable performance relationship. The results were inconclusive, yet contributed to investigations of moderating factors on the ambidexterity and sustainable performance relationship. It is recommended that future studies should investigate other possible roles that environmental dynamism might play. A further investigation of other factors that may play a moderating role on the ambidexterity and sustainable performance relationship could also be investigated.

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Competing interests

The authors have declared that no competing interest exist.

Authors' contributions

Both authors contributed equally to the development of the manuscript. M.J. conducted the initial research as part of her MCom dissertation under the supervision of Dr R. Maritz.

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Data availability statement

Raw data were generated at the University of Pretoria. Derived data supporting the findings of this study are available from the corresponding author (R.M.) on request.

Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

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Appendices starts on the next page →

Appendix 1

Results

TABLE 1-A1: Hypothesis and survey questions matrix.

Hypotheses	Constructs involved	Question(s) in final questionnaire
H _{1(a1)} : There is a positive correlation between ambidexterity and sustainable organisational performance.	<ul style="list-style-type: none"> Ambidexterity Sustainable organisational performance 	<ul style="list-style-type: none"> Question 3 (divided into two sub-dimensions known as exploration and exploitation) Question 2
H _{2(a1)} : There is a positive correlation between exploitation and exploration.	<ul style="list-style-type: none"> Exploration Exploitation 	<ul style="list-style-type: none"> Items 3.1, 3.3, 3.5 and 3.8 in question 3 measure the exploration sub-dimension of ambidexterity Items 3.2, 3.4, 3.6 and 3.7 in question 3 measure the exploitation sub-dimension of ambidexterity
H _{3(a1)} : The relationship between ambidexterity and sustainable organisational performance is moderated by environmental turbulence.	<ul style="list-style-type: none"> Environmental turbulence Ambidexterity Sustainable organisational performance 	<ul style="list-style-type: none"> Question 1 Question 3 (divided into two sub-dimensions known as exploration and exploitation) Question 2

TABLE 2-A1: Pearson's product–moment correlation test results between the five dimensions.

Correlations	Variable	Environmental dynamism	Sustainable organisational performance	Exploration	Exploitation	Competitive intensity
Environmental dynamism	Pearson correlation (<i>r</i>)	1	0.388*	0.591*	0.486*	0.531*
	Significant (2-tailed)	-	0.000	0.000	0.000	0.000
	<i>n</i>	157	152	151	151	150
Sustainable organisational performance	Pearson correlation (<i>r</i>)	0.388*	1	0.543*	0.504*	0.449*
	Significant (2-tailed)	0.000	-	0.000	0.000	0.000
	<i>n</i>	152	152	149	149	148
Exploration	Pearson correlation (<i>r</i>)	0.591*	0.543*	1	0.786*	0.605*
	Significant (2-tailed)	0.000	0.000	-	0.000	0.000
	<i>n</i>	151	149	151	151	149
Exploitation	Pearson correlation (<i>r</i>)	0.486*	0.504*	0.786*	1	0.593*
	Significant (2-tailed)	0.000	0.000	0.000	-	0.000
	<i>n</i>	151	149	151	151	149

*, Correlation is significant at the 0.01 level (2-tailed).

Appendix 2

Link between key constructs and questions

TABLE 1-A2: Questionnaire breakdown.

Question items	Key constructs	Measurement	Source of scales
Question 1	Environmental turbulence	Respondents were asked to rate their organisation's external environment on a five-point Likert scale ranging from 'strongly disagree' to 'strongly agree'.	Jansen, Tempelaar, Van den Bosch and Volberda (2009, p. 17)
Question 2	Sustainable performance	This construct is measured using a five-point Likert scale ranging from 'significantly worse' to 'significantly better'. Respondents were asked to rate each statement describing their organisation's performance in relation to its best competitor in the industry.	Chandrasekaran et al. (2012, p. 147)
Question 3	Ambidexterity	Ambidexterity is divided into two sub-dimensions known as exploration and exploitation. The ambidexterity construct is measured through a five-point Likert scale ranging from 'definitely false' to 'definitely true'. Respondents were asked to rate each statement to reflect their organisation's product and/or service development.	He and Wong (2004, p. 486)
Section B	Demographic questions	These questions sought to determine the respondent's position in the company, highest qualification, years of work experience and industry in which the respondent's organisation operates. The questions pertaining to respondent's position in the company, highest qualification and industry were all measured on a multiple-choice, single-response scale designed by the researchers. The years of work experience question used an open-ended self-completion question.	Own compilation

Note: Please see the full reference list of the article, Jacobs, M., & Maritz, R. (2020). Dynamic strategy: Investigating the ambidexterity–performance relationship. *South African Journal of Business Management*, 51(1), a1643. <https://doi.org/10.4102/sajbm.v51i1.1643>, for more information.

Appendix 3

Questionnaire

Resp. no.

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- Dynamic strategy survey -

Dear respondent

Thank you for your willingness to complete the dynamic strategy survey. The purpose of this survey is to determine how product development takes place in organisations from emerging economic contexts (i.e. South Africa), how these organisations depict their performance and the levels of environmental turbulence present in the different industries of organisations. The survey should not take more than *15 minutes* to complete. This is an anonymous and confidential survey. You cannot be identified and the answers you provide will be used for research purposes only.

Please answer *all* the questions by placing a cross (·) in the appropriate block. There are no right or wrong answers.

Section A:

- Q1. A number of statements describing the rate of change and stability of the external environment of the organisation over the past year appear below. Please read each statement carefully and then indicate the extent with which the statements demonstrate the external environment of your organisation¹.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1.1 Environmental changes in our industry are intense.	1	2	3	4	5
1.2 Our clients regularly ask for new products/services.	1	2	3	4	5
1.3 In our industry, different types of changes are taking place continuously.	1	2	3	4	5
1.4 In this year, nothing has changed in our industry.	1	2	3	4	5
1.5 In our industry, the volumes of products/services to be delivered change fast and often.	1	2	3	4	5

- Q2. A number of statements describing the performance of your organisation appear below. Please read each statement carefully and then indicate the extent to which the following statements indicate how your organisation compares to its best competitor in your industry over the past year².

	Significantly worse	Worse	Neither worse nor better	Better	Significantly better
2.1 Overall Performance.	1	2	3	4	5
2.2 Return on Investment (ROI).	1	2	3	4	5
2.3 Market share.	1	2	3	4	5
2.4 Profit growth.	1	2	3	4	5
2.5 Sales growth.	1	2	3	4	5
2.6 Market share growth.	1	2	3	4	5

- Q3. A number of statements describing product development in an organisation appear below. Please read each statement carefully and then indicate the extent to which the statements represent product and/or service development and the outcome over the past year in your organisation³. (Select the option that describes your organisations movement over the past year.)

	Definitely false	False	Neither true nor false	True	Definitely true
3.1 Introduction of new generations of products or services.	1	2	3	4	5
3.2 Improvement of existing products or services.	1	2	3	4	5

1.[Environmental Dynamism – Jansen et al. (2009) Strategic leadership for exploration and exploitation; pp.17]

2.[Performance – Chandrasekaran et al. (2012) Antecedents to ambidexterity competency; pp.147]

3.[Ambidexterity – He and Wong (2004) Exploration vs. Exploitation; pp.486]

		Definitely false	False	Neither true nor false	True	Definitely true
3.3	Extension of product or service range.	1	2	3	4	5
3.4	Improvement of product or service flexibility and adaptation.	1	2	3	4	5
3.5	Opening up new markets.	1	2	3	4	5
3.6	Reduce production or service costs.	1	2	3	4	5
3.7	Enhancement of existing markets.	1	2	3	4	5
3.8	Enter new technological fields.	1	2	3	4	5

Q4. A number of statements describing industry competition appear below. Please read each statement carefully and then indicate the extent to which you agree or disagree that the statements below represent the competitive intensity over the past year in your industry.⁴

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
4.1	Competition in our industry is cut-throat.	1	2	3	4	5
4.2	There are many promotion wars in our industry.	1	2	3	4	5
4.3	Anything that one competitor can offer, others can match easily.	1	2	3	4	5
4.4	Price competition is a hallmark of our industry.	1	2	3	4	5
4.5	One hears of a new competitive move almost every day.	1	2	3	4	5
4.6	Our competitors are relatively weak.	1	2	3	4	5

Section B: Demographic questions:

Q5. What is the current position you hold in your organisation? Please choose the option most relevant to your business.

Executive	1
Senior Manager	2
Middle Manager	3
Junior Manager	4
Specialist	5
Technical / Administrative	6

Q6. How many years of work experience do you currently have? _____ years.

Q7. Please indicate your *highest* qualification that you have obtained.

Grade twelve (Matric)	1
Certificate	2
Diploma	3
Bachelor's Degree	4
Honours Degree	5
Master's Degree	6
PHD/Doctorate	7

Q8. In which *industry* does your organisation conduct business? Please choose the option most relevant to your business. *The statements continue on the next page.*

Agriculture	1
Manufacturing	2

4.[Competitive Intensity - S. Auh, B. Menguc (2005) Balancing exploration and exploitation; 1657]

Business services	3
Finance	4
Transport	5
Information and Communication Technology (ICT), including web-based/online businesses	6
Health care	7
Education	8
Social Services	9
Customer services	10
Hospitality and Tourism (e.g. restaurants, hotels or guesthouses)	11
Other: Please specify:	12

Thank you for completing the survey. We appreciate your assistance.