NETWORKING ABSORPTIVE CAPACITY, CORPORATE ENTREPRENEURSHIP TO FIRM SUSTAINABILITY DEVELOPMENT PERFORMANCE OF ORGANIZATION. A CASE STUDY OF MANUFACTURING COMPANIES IN SOUTH-SOUTH, NIGERIA

¹SHADRACH Omofowa, Ph.D., ²MARY Shadrach Omofowa

¹Department of Business Administration, Global Polytechnic, Benin City. ²Department of Business Administration, University of Benin, Benin City, Nigeria Email: shadrachomofowa@gmail.com¹, maryshadrach7@gmail.com²

Abstract

The purpose of this study is to examine absorptive capacity, and corporate entrepreneurship on firm sustainability in some selected manufacturing firms in south-south Nigeria, the study used a survey research design method, and data were collected from 366 selected manufacturing firms from five states, Edo, Delta, Rivers, Akwa Ibom, Cross-River in south-south, Nigeria. STATA 13.0 statistical software was employed for data analysis. The findings show a significant relationship between absorptive capacity, corporate entrepreneurship on firm sustainability. In particular, the model results show the level of linkage between innovation, creativity, and new business venturing on firm sustainability. Also, corporate entrepreneurship creates an avenue for implementing entrepreneural orientation. Moreover, the proactive nature of entrepreneurs enhances the dynamic capability of entrepreneurship. All the variables tested under the independent variable have position path coefficients as factors that affect firm sustainable performance. It recommends the deficiencies of entrepreneurs in addressing their capability to promote the sustainable development of firms.

Keywords: Absorptive Capacity, Corporate Entrepreneurship, Firm Sustainability, Performance Management, Innovation, Creativity, Business Venturing.

INTRODUCTION

Absorptive capacity is an important concept that is widely referenced and that has achieved broad support, yet it remains inherently difficult to implement due to its complexity and purpose particularly challenging is the implementation of the knowledge acquired and its significant potential negative or positive consequences on firms' sustainability (Grant, 1996, Nonaka & Takeuchi, 1995). Also, sustainable business existence depend on the firm's ability to recognize and exploit new venture (Cohen & Levinthal, 1999, Lis & Sundoiska, 2020, Lumpkin & Dess, 1996, Miller, 1983). Absorptive is essentially identifying, assimilating, transforming, and exploiting valuable external knowledge that improves output and the market environment. Zahra & George, 2002, admit also areas such as inter-organizational collaboration and learning (Lane & Lubatkin, 1998) marketing (Xiong & Bharadwaj, 2011) entrepreneurship (Liao, Welsch & Stoica, 2003) supply chain management (Azadegan, 2011) and international business (Lyles & Sack, 1996). A firm that possesses competencies or resources but lacks dynamic capabilities may not be able to make it in the long run due to competitive advantage, moreover, the threat of rivalry between existing competitors is porters forces, in addition to a variety of other factors characterized the need for innovation (Porter, 2008, Tidd & Bessant, 2018 Augier & Teece, 2009, Nason & Wiklund, 2018). We therefore argue that absorptive capacity are important success factor for sustainability. Extant literature defines absorptive capacity as the firm's ability to integrate, build and reconfigure internal and external knowledge to address rapidly challenging issues for development and growth (Zollo & Winter, 2002, Van den Bosch, Volberda, & De Boer, 1999, Teece, Pisano & Shuen, 1997, Cohen & Levinthal, 1990). Other fierce turbulent business environments (Kuratko & Morris, 2018, Cohen & Levinthal, 1990). These serve as potent capabilities for sustainable changes that occur in the environment (Eisenhardt & Martin, 2000, Oliver & Holzinger, 2008) which absorptive capacity contributes to business performance (Magdalena Jimenez-Barrionuero, Molina, Victor & Garcia-Morales, 2019, Zahra & George, 2002). Many factors contribute to sustainable business performance, however, most entrepreneurs attribute it to financial performance indicators neglecting the superlative role of absorptive capacity. Nonetheless, numerous studies have shown that absorptive capacity is associated with sustaining the performance of business ventures (Hsieh & Chou, 2018, Garcia-Sanchez,

Garcia-Morales & Martin-Rojas, 2018, Hart, Gilstrap & Bolino, 2016, Tavani, Sharifi & Ismail, 2014, Tzokas, Kim & Akbar, 2015, Xie, Zou & Qi, 2018). Networking capabilities (Munyanyi & Pooe, 2019, Kim, Kandampully & Bilgihian, 2018, Lagge-Hellman, Landqvist & Lind, 2018) knowledge sharing combination (DeBoer, Van Den Bosch & Volberda, 1999); changes and adaptation through learning (Chalmers & Balan-Unuk, 2013, Cohen & Levinthal, 1990, Picoli & Takahashi, 2016). Innovation in sustainable supply chain (Rodriquez & Da Cunha, 2018) absorptive capacity and performance in organizational sustainability (Garay, Font & Pereira-Moliner, 2017), environmental dynamism and technological innovation (Zhai, Sun, Tsai, Wang, Zhao & Chen, 2018). Most of the studies gave little attention to firm sustainability.

Scholars affirm that firm sustainability is positively linked to absorptive capacity and strategies in product differentiation (Cook & Brown, 1999, Lane & Lubatkin, 1998 Szulanski, 1996, Zahra & George, 2002, Garay Font, Pereira-Moliner, 2017). Prior studies suggest charting new business venturing and strategic selfrenewal (Lis & Sudolska, 2020), corporate governance conditions (Maqtari Farhan, Al-Hattami & Khalid, 2020), organizational variables and knowledge creation (Camison & Fores, 2011, Solis-Molina, Hernandez-Espallardo & Rodriquez-Orejuela, 2018, Liu, Zhao & Zhao, 2018). Other studies observed variables such as social innovation indicators (Chalmers & Balan-Unuk, 2013, Osburg, 2013 Unceta, Castro-Spila & Fronti, 2016), organizational learning and social integration mechanisms (Picoli & Takahashi, 2016); sustainable reporting and sustainable development inter-linkages (Lozano & Huisingh, 2011) proactive environmental strategies (Hsu & Liao, 2014) chain management and knowledge base development (Liu, Zhang & Ye, 2019); sensing, identifying and assessing new emerging opportunities (Teece et al, 1997). Despite several studies on absorptive capacity corporate entrepreneurship, there is still more to understand in terms of how it affects firm sustainability. Studies relating absorptive capacity, entrepreneurship, to firm sustainability in manufacturing companies are scanty, and have not been fully examined, further, examining how absorptive capacity. Entrepreneurship and firm sustainability are linked and networked is an important research area. More so, many part studies assessed absorptive capacity in developed economies contexts (e.g. Jirapon, Lee, Park & Song 2018, Koo, 2019, Koo & Kim, 2019, Shapiro, Tang, Wang & Zhang, 2015). We align with the argument of Rezapouraghdam Alipour & Arasli, (2019) that for organization to become sustainable and improve in performance, there is the challenge of capacity development and entrepreneurial orientation. Nonetheless, there is a gap in knowledge on the subject especially in an emerging market context. Besides, we respond to calls by other researchers to examine absorptive capacity, entrepreneurship, and firm sustainability in varying contexts (e.g. Malvestiti, Esteves & Dandolini, 2020, Magdalena Jimenez-Barrionuevo, Molina & Garcia-Morales, 2019) especially in developing countries (Asogwa, Ugwu, Uzuagu, Abolarinwa, Okereke & Anorue, 2020, Munyanyi & Pooe, 2019).

In light of previous studies, this study fills the gap in absorptive capacity literature by providing guidance to entrepreneurs, managers, and stakeholders on the importance of absorptive capacity. Specifically, the paper examines the impact of absorptive capacity and entrepreneurship on firm sustainability performance in manufacturing companies, We argue that improving research and development can impact positively on entrepreneurial role in manufacturing companies and firm sustainability leading to effective performance. Arguably, the relationship is absolutely direct without blemish. Drawing on Dynamic Capabilities Theory (DCT) which allows firms to respond to changes in the market and determine the pace at which the firm aligns and realigns its resources to take advantage of the opportunities that arise in the business environment (Teece, 2014) and also, knowledge-based view (KBV) view, firms and organizations as a pool of knowledge resources that, if employed in a unique style can create competitive advantage (Barney, 2001, Peteraf, 1993). The authors affirmed that absorptive capacity significantly impacts entrepreneurs and firm sustainability thus, lending credence to the basic insight of dynamic capabilities theory and the knowledge-based view that absorptive capacity relates to the ability of the entrepreneur to combine external and internal knowledge resources that gives a firm greater competitive advantage which helps to explain why so firms are better and perform greatly when strategic resources are carefully managed and sustained.

The remainder of this paper is arranged in the following manner, Section 2 comprises a theoretical foundation and literature review, Section 3 describes the methodology, Section 4 presents research results, and Section 5 presents a discussion, conclusion limitation, and suggestion for future studies.

LITERATURE REVIEW

Theoretical Foundation

Dynamic capabilities theory suggests that access to knowledge and information enables a firm to enhance its ability to acquire, assimilate, transform, and exploit entrepreneurial-related skills for innovation and sustainable growth (Mu, Thomas, Peng & Benedetto, 2017) particularly valuable for firm is knowledge, knowledge may not be evenly distributed among firms and as a consequence, organization that search more widely, may create better understanding of knowledge acquisition, sharing and utilization, this increases such firm knowledge diversity. And such firms are potentially able to improve internally and externally (Tehseen & Ramayah, 2015). However, for a firm to have a sustainable competitive advantage. This depends on the firm's ability to develop, recognize the value of external knowledge, assimilate, and successfully use it. Manufacturing companies' success depends on how well they use their capabilities and resources. A knowledge-based view has been used to explain success and failure in a Schumpeterian world (Teece et al, 1997). Entrepreneurial competencies are linked to a manager's knowledge, skills, capabilities, and valuable resources that enhance a firm's sustainable growth (Tehseen & Ramayah, 2015). In this context, absorptive capacities reside in individual employees, whereas corporate entrepreneurs are the learning behaviour, intention, orientation, and skills of the workforce in a flexible way in making organizations build capacity and innovate (e.g. Chang, Gong, Way & Jia, 2013). The literature operationalizes the concept of absorptive capacity as the management of knowledge in sequential stages such as acquisition, assimilation, transformation, and exploitation (Zahra & George, 2002) Each stage encourages innovations and greater firm performance (Patterson & Ambrosini, 2015, Dobrzykowski, Leuschner, Hong & Ron, 2015, Lane, Koka & Pathak, 2006, Saiz, Perez, Miguel & Manzanedo del Campo, 2018, Volberda et al, 2010, Ade & Habib, 2016). Arguably, firms that develop their absorptive capacity and knowledge exploitation encourage new knowledge creation activities through the use of different external sources (e.g. alliances) can boost the results of their entrepreneurial activities resulting in sustainable growth consistent with the knowledge-based view theory and also the theory of dynamic capabilities organizational with strong absorptive capacity and dynamic capabilities expand their knowledge base and skill to improve their ability to assimilate to use future information in the identification of business, opportunities and facilitate appropriate decision making.

Conceptualizing Absorptive Capacity

One of the most important strategic assets of the firm, which is rooted in the firm's processes, philosophy, and human capital, development is absorptive capacity (Grant; 1996, Morabito, 2013). Escribano, Fosfuri & Tribo (2009), Hart, Gilstrap & Bolino (2016) defined absorptive capacity as the set of knowledge-related capabilities entrenched within a firm's routine and strategic processes, including the four dimensions, namely, knowledge acquisition, assimilation, transformation, and exploitation. The underlying notion behind the absorptive capacity construct is that prior-related knowledge determines a firm's ability to remain competitive, this is further confirmed in the knowledge-based view of the firm which is an extension of the dynamic capability theory and builds on the central role of knowledge, reconfigure internal and external competencies through knowledge sharing and transfer in building a competitive edge to address a rapidly changing environment. The absorptive capacity of a firm does not play a leading role only in determining the magnitude and range of knowledge flows but is an important driver of organizational activities (Levi-Jaksic, Radovanovic & Radojicic, 2013). A firm that fronts new knowledge is highly likely to succeed in responding to market changes, through recombining this knowledge with some vital information. Although many studies are grounded in the context of the term (Van den Bosch et al, 1999, Szulanski, 1996). However, Zahra & George (2002) divided absorptive capacity into potential and realized absorptive capacity. Jansen, Van den Bosch & Volberda (2005) likewise, proposed a linear relationship between acquisition, assimilation, transformation, and exploitation, why Todorova & Durisin (2007) critically reexamined the reconceptualization as two parallel elements. This study considers four phases in the capacity to absorb knowledge: Recognition of value, assimilation transformation, and exploitation. This phase can be classified into two dimensions realized absorptive capacity and potential absorptive capacity (Zahra & George, 2002). Realized absorptive capacity includes two capacities, knowledge transformation, and knowledge exploitation These foster the rapid development of entrepreneurial skills, traits, motive roles, and self-image needed for business sustainability (Zali, Bastian & Quneshi, 2013). Potential absorptive capacity includes the capacity to recognize value and assimilation of knowledge, this enables organization to be receptive to external knowledge, the knowledge can be sourced from the internet, scientific publications, conference participation forum meetings, and participation in training sessions, apart from conferences, face-to-face communication provides an enabling environment for effective knowledge sharing, discussion of complex issues, provision and reception of feedback, the entrepreneurs is more likely to navigate the knowledge landscape, better integration with local partners. Such practices show an enhanced absorptive capacity for knowledge building that could leverage firm sustainability and organizational performance. Aside from this formal process, we conclude that absorptive capacity has great utility in complementing and transforming what has already been known to occur continuously, it links changes and adaptation as a way of responding to serial events, and it makes it possible to internalize new knowledge, acceptance of change that would optimized constant flow processes. In this study, we define absorptive capacity as what constitutes a set of routines and processes that permit firms to establish knowledge flow to improve their collective capacity to learn, add value, recognize the value of new information, develop innovation potential leading to entrepreneurial skill development, and firm sustainability performance.

Conceptualizing Corporate Entrepreneurship

The phenomenon of corporate entrepreneurship was first studied in the early 1980s. Miller (1983) introduced the concept in research to refer to the development of entrepreneurial activities in already existing firms. The globalization of the market and the high indices of technological changes in organization requires firms to innovate constantly and improve their flexibility response capacity and competitiveness (Huse, Neubaum & Gabrielsson, 2005). Researchers have suggested that developing entrepreneurial capability is a great strategy by which firms can acquire such characteristics, which is a good way to revitalize existing organizations by making them more innovative (Kuratko, McMullen, Hovnsby & Jackson, 2017, Antoncic & Histrich, 2001). This study uses entrepreneurship or independent entrepreneurship to describe the entrepreneurial efforts of individuals operating outside the context of an existing organization, and a variety of terms for the entrepreneurial efforts within an existing organization, such as corporate entrepreneurship, corporate venturing, intrapreneurs, internal corporate entrepreneurship, internal entrepreneurship, strategic renewal, and venturing. However, in this study, we consider entrepreneurship as the broader concept and focus on corporate entrepreneurship as referring specifically to entrepreneurs within existing organization Corporate entrepreneurship refers to the development of new ideas and opportunities within the organization that can help to directly improve, the company's profit and improve its competitive positions. Through corporate entrepreneurship value creation is possible by harnessing the creativity and efforts of employees of an organization. Corporate entrepreneurship takes into consideration the unique operational context of the organization since there is no time that the business operating environment is static. This change is global and firms are expected to change with time, adapt, acquire and transform knowledge, and produce dynamic organizational capability. Organizations have turned to corporate entrepreneurship for innovation, wealth creation, and sustainable growth of organizations (Miller, 1983, Lumpkin & Dess, 1996). Corporate entrepreneurship takes into account factors such as innovativeness, proactiveness, and new business venturing and transforms them through self-renewal for firm sustainable development and growth. This corporate entrepreneurship is the process by which an individual or group of individuals in association with an existing organization create a new firm or promote renewal or innovation within the organization (Sharma & Chrisman, 2007).

Conceptualizing Firms Sustainability

The concept of sustainable development has received attention from organizational and behavioural sciences research because of the notion that the word sustainability means to support and maintain a condition so that it continues without interruption, diminution, giving way, fading away, fading, or yielding (Gove, 1961). It means that we want whatever we are doing to continue to be done in the future, just such a concern with business as usual and the perceived environmental degradation resulting from it, that inspired the Club of Roma in 1972 to issue a report (Meadows, Meadows, Randers & Behrens, 1972). According, to the World Commission 1987, sustainability is defined as the sustainable development that meets the needs of the present without compromising the ability of the future generation to meet their own needs. Sustainable development is a process of social advancement that accommodate the needs of current and future generation and that successfully integrates economic, social, and environmental consideration in

decision-making Dunphy, Griffiths & Benn (2007) submitted that business sustainability explains the relationship and continued contribution of business to societies development leading to self-fulfillment of the entrepreneurs. Fishers (2010) asserts that corporate sustainability connotes a management philosophy that focuses on organizational growth and profitability, environmental protection, social justice, and equality. Birkinshaw, Hamel & Mol (2008) argue that most sustainability development is in innovation research which focuses on various aspects of technological, process, and product innovation that guarantee business sustainability. They argue that the area is relatively under-research, which they term as business sustainability in management innovation, they defined the term as the invention and implementation of a management practice, process structure, or technique that is new to the state of the art and is intended to further organizational continuity (Birkimshaw et al, Birkinshaw et al, 2008), Lu, Kuo, Lin, Tzeng & Hnang (2016) contend that business sustainability is those competitive advantages that enable an organization to gain long-term benefits and avoid being outdone by potential competitors through strategic replication or imitation. These advantages do not disappear as the environment changes, to this end, some scholars have considered the sociological perspective and point out that social responsibility, environmental protection, and business ethics can make organization gain sustainable performance (Yu, Zhang Lin & Wu, 2017, Omofowa, Akhidue-Ogiso, Nwachukwu & Minh Lam 2021) arguably, organization uses different techniques to assess business sustainability recycling products with reverse logistics (Hsu & Liao, 2014), managing risk, engaging in innovation and incorporating internal changes (Deloitte & Mhi, 2016, Rodriguez & Da Cunha, 2018, Upstill-Goddard, Glass, Dainty & Nicholsum, 2016), economic development, environmental management and social equality (Onu, 1987, Lozano & Huising, 2011) are some of the technique used to substantiate business sustainable development performance. These techniques are quite unique and effective because they provide satisfactory field evidence to the entrepreneur (Cohen & Levinthal, 1990). We reason that business sustainability development rests properly on the corporate entrepreneurial capability to understand absorptive capacity, good work environment, economic development, social development and environmental protection, policies, and procedures of governmental regulations.

Absorptive Capacity and Firm Sustainability

Firm absorptive capacity relates to corporate entrepreneurship because it involves applying the acquired knowledge and assimilated knowledge to create a sustainable condition for business growth and development (Cohen & Levinthal, 1990). Absorptive capacity has a positive effect on the productivity of innovative activities and improves the efficiency of the new product development process (Cohen & Levinthal, 1990) and at the same time, the firm absorptive capacity depends on the innovation effort the firm has made in the process. In addition, developing property absorptive capacity is very important for firms because it measures firms' ability to assimilate, transform, and exploit both internal and external knowledge resources in shaping their dynamic responses to the business competitive environment and open innovation of products, that would guarantee sustainability or the organizations (Cohen & Lenvinthal, 1990, Zahra & George, 2002), leading to competitive advantage edge. In order to achieve the above, it becomes necessary for organization to develop new products, product processes, systems, and organizational structure activities that are linked to corporate entrepreneurship. However, this demands new knowledge, proactive steps, better information dissemination, and pressure on corporate entrepreneurs to adopt these measures (Ade & Habib, 2016).

Prior research has analyzed the moderating role of absorption capacity in the relationship between entrepreneurial orientation and firm sale growth (Kohtamaki, Heimonen & Parida, 2019) strategic agility related to corporate entrepreneurship was also analyzed from its mediating role in the relationship between absorptive capacity and firm performance (Kale, Aknar & Basar, 2019, Verma, Bharadwaj & Nanda, 2017). This means that there should be a dynamic relationship between absorptive capacity and the entrepreneurial capability that organization develops based on the above absorptive capacity of firms, this could be used to predict corporate entrepreneurship behavioural. Miller (1988) connects absorptive capacity as it defines a firm capability to create new products and modify the existing ones in order to find demand for its current and future markets. Apart from product development, renewal, and improvement process, corporate entrepreneurship entails innovation, this innovation tendency describes perfecting production procedures,

methods, and technological leadership. Corporate entrepreneurship activities also focus on research and development activities, in addition, activities that would boost the firm ability to identify, assimilate and exploit the knowledge created outside the organization, these activities promote a higher degree of corporate entrepreneurship (Jimenez-Barrionuero, Garcia-Morales & Molina, 2011). Prior studies show a relationship between absorptive capacity and corporate entrepreneurship. Jimenez-Barrionuero et al. (2019) study showed that absorptive capacity yields a positive influence on business venturing and self-renewal (corporate entrepreneurship). They found that entrepreneurs could enhance potential and realized absorptive capacity at the same time in order to improve the end performance of their corporate entrepreneurial capabilities, thus, absorptive capacity strongly influences corporate entrepreneurship activities. Zhai, Sun, Tsai, Wang, Zhao & Chen (2018) distinguish between entrepreneurship, absorptive capacity environmental dynamism, and corporate technological innovation performance, the result shows that there is a moderating effect positively of absorptive capacity on entrepreneurship. This depends dynamism of the organizational culture as well as on the performance of innovation, also how the entrepreneur has been able to access external information and knowledge (Xu, Boadu & Xie, 2019). Entrepreneurial combinative capabilities can lead to the attainment and utilization of vital information and knowledge, especially knowledge that is considered to be a critical asset for generating absorptive capacity (competitive advantage) such shows a positive relationship between absorptive capacity and entrepreneurial combination capacity (De-Boer, Van Bosch & Volberda, 1999, Chen, Li & Evans, 2012).

However, some past studies linking absorptive capacity to corporate entrepreneurship have reported mixed and weak results. Wale, Parida & Patel (2013) found that an inverted U-shaped relationship exists between absorptive capacity, firm performance, and entrepreneurship W. Yuwono (2020) found that potential absorptive capacity has no effect on entrepreneurial innovation although even if we agree that firms' absorptive capacity could yield negative effect, conventional understanding aligns more with the positive, but a firm with high absorptive capacity is going to exploit the industry which might not necessarily translate to profit. Arguably, absorptive capacity is an important driver of manufacturing companies' entrepreneurial creative ability and leads to continuous sustainable business performance. Based on the analysis above, we hypothesized thus:

H₁: Absorptive capacity does not significantly impact manufacturing firms' sustainability.

Corporate Entrepreneurship and Firm Sustainability

In a recent study, Jimenez-Barrionuero et al. (2019) observed that entrepreneurs must be able to enhance potential and realize absorptive capacity at the same time in order to improve the end performance of the corporate entrepreneurial project, the study shows that both absorptive capacities are strongly related to corporate entrepreneurship activities and has a strong positive influence on sustainable business performance in Spain. To better understand the relationship between absorptive capacity proactivity in sustainability practices and performance in organizational sustainability, a study was carried out with 408 small and medium-sized companies in the tourism industry. The study notes that absorptive capacity is treated only at the level of knowledge acquisition, and the various sources and channels of information on sustainability and its usefulness (Garay et al, 2017) focused on three types of business sustainability: they are, social, environmental and economic, they argued that, oriented toward growth, relate to communication with sources within organization, and to individual and informal channel, arguably implementation of business sustainability relates to communication with stakeholders and business sustainable performance relates to the introduction of environmental and economic practices, to the use of industry and wider sources of knowledge information, and the usefulness of the knowledge both external and internal, the study shows a position relationship in external knowledge in business sustainability, how its more useful and successful in achieving sustainable business performance when they are adapted to absorptive capacity, therefore sustainable business performance is related to the usefulness of perceived knowledge on Business sustainability. Rodriguez & Da Cunha, (2018) affirm that absorptive capacity is crucial in the innovation of sustainable business performance supply chain. In the same line of thought Chalmers & Balan-Vnuk (2013) & Zhai et al. (2018) reinforce that high absorptive capacity helps businesses to recognize entrepreneurial opportunities and to absorb the resources of external knowledge, thus promoting quick responses to changes, reduce risks and uncertainties of market dynamics. With adequate mastery in absorptive capacity,

organization can accelerate knowledge acquisition, and answer fundamental questions, and this positively links high absorptive capacity to sustainable business performance and innovation. Liu, Shen, Ding & Zhao (2017) examined the path relationship tie, strength, absorptive capacity, and firm innovation performance in Chinese manufacturing industries. The study shows that strength is positively related to innovation performance and that absorptive capacity has a positive impact on sustainable firm innovation performance. By implication, firms that identify knowledge, assimilate it, and exploit it also their financial performance. Petti & Zhang (2013) observed that the combination of absorptive capacity and technological entrepreneurship impact positively on firm sustainable performance. Deshpande (2018) affirmed that advanced manufacturing Technology (AMT), Absorptive Capacity (AC), and Mass Customization (MC) Capabilities and Competitive Advantage (CA) drive the growth, success, performance, and sustainability of firms.

However, some past studies linking absorptive capacity to performance have reported mixed results (Medase & Barasa, 2019, Wang, Wang & Horng, 2010). For instance, Hsu & Liao, 2014 reported that absorptive capacity comes with a high cost in implementation which will not be beneficial to firm sustainable performance in both the short and long run. Upstill-Goodard et al (2016) reported that employees in organization normally resist new knowledge since it might lead to their disengagement in the organization, it represents a major barrier to the implementation of organization sustainability and absorptive capacity. Arguably, absorptive capacity is an important driver of corporate entrepreneurial skills development that leads to business sustainability. Based on the above analyses, we hypothesized thus:

H₂: Corporate Entrepreneurship has no significant influence on firms' sustainability.

METHODOLOGY

Different world views have been advocated by scholars, post-positivism (Bryman & Bell, 2003, Reichardt & Rallis, 1994), constructivism or social constructivism (Lincoln & Guba, 1985), and transformation (Morgan, 2007, Tashakkori & Teddlie, 2010). The extent to which research is guided by a particular research philosophy depends on the state of knowledge and theory development in a particular field and the researcher's view of the world. A cross-sectional survey research design was used in the quest to understand the cause-effect relationship between the predictor and outcome variables without experimental manipulation (Babbie & Mouton, 2001). The research design was chosen because it allows the researcher to answer the "WHAT" "WHO" and "HOW MUCH" research questions (Bryman & Bell, 2015).

This study adopts descriptive, quantitative, cross-sectional correlational variables at a given time in order to describe the relationship between variables (Breakwell, Hammond, & Fife-Schaw, 1995). A cross-sectional survey is appropriate because the information about a subject that is gathered represents what is going on at a given point in time, Correctional analysis was used due to the fact that the researcher tested the relationship between one set of variables against another. Both cross-sectional and correlational research allow the researcher to test the hypothesis quantitatively, the disadvantage of correlational research is that it does not determine causation (Talbot, 1995, Sousa, Driessnack & Mendes, 2007). In other words, before casualty can be explored an empirical relationship between relevant variables must be proposed (Polit & Beck, 2012).

This study targets respondents from the quoted manufacturing companies/firms in Nigeria. We recognized the need for a regional-based study to minimize the adverse effects of certain variables following the examples of Jimenez-Barrionyevo et al. (2019). As such this allowed us to reduce the impact of political, economic, socio-cultural, legal, and technological differences that affect empirical results when cross-country samples are used. However, we achieved generalization as absorptive capacity, corporate entrepreneurship impact on sustainable business development, growth, and performance is studied across different sectors (Jimenez-Barrionuevo et al., 2019). Nigerian Manufacturer Association (MAN) has a comprehensive list of all the quoted manufacturing firms in Nigeria and the population for this study, was picked from the MAN database, there is a list of 2350 firms in the MAN and SON (Standard Organization of Nigeria) engaging in manufacturing and productivity activities in Nigeria as of 10th January 2019, however, as a result of COVID-19 lockdown in Nigeria, as at 10th January 2021, it has reduced drastically from 2350

– 1260. Therefore this study purposively selected only 1000 firms with active employees of 4376 that are directly or indirectly involved in the manufacturing. The firms eliminated are firms in the oil and gas service industry following the prior researcher's examples (Antoncic & Hisrich, 2001, Jimenez-Barrionuero et al., 2019, Murray & Kotebe, 1999, Zahra 1993). The study focused on sales, marketing, finance/audit, customer service, and engineering department CEOs, Chief Operating Officers, and chief financial officers of the key department. The survey was done after the COVID-19 lockdown in Nigeria. The sample size was determined by using the Taro Yamane formula (1964) for sample size determination for a finite population.

$$n = \frac{N}{1 + N(e)^2}$$

Where,

n = sample size

N = Population size

e = error margin 5%

The population size of 4376 was used for the study

The population size of
$$n = \frac{4376}{1 + 4376 (0.05)^2}$$

$$n = \frac{4376}{1 + 4376 (0.0025)}$$

$$= \frac{4376}{1 + 10.94}$$

$$n = \frac{4376}{11.94} = 366$$
 (sample size)

As such 366 questionnaires were emailed to the respondent using the email address obtained from their companies annual reports, their personal Facebook, Linkedin account and through their listed directories https://www.finelib.com companies directory search engine.

Model Specification

This study adapted and modified the model specification of Omofowa & Omofowa (2023), they examine personal initiative and social entrepreneurial wealth creation in south-south, Nigeria. Primary data from employees in manufacturing firms was used, personal initiative was taken as the independent variable, and social entrepreneurship was taken as the dependent variable. This study modified their model to ensure that absorptive capacity and corporate entrepreneurship is taken as the independent variable, and business sustainability as the dependent variable.

NCABSCAP = Networking Absorptive Capacity

The model is specified in Econometric form in equation (1)

ACAP = Absorptive Capacity

COPENT = Corporate Entrepreneurship SUPERF = Sustainable Business Performance

U = Error term $\alpha o = Constant$

 $\beta_1 - \beta_3 = \text{Regression coefficient}$

The survey are useful methods for obtaining substantial quantities of data from respondent (McDaniel, Lamb & Hair, 2008) either by means of interview survey or structure questionnaires. The study used primary data comprised of a set of structure questionnaires. The structured questionnaires were based on the principle of a quantitative approach to social research that lay emphasis on hypothesis testing and factual confirmation of theory (Lim 2008, Liu & Lin 1997). The questionnaire methods are faster, cheaper, and more effective means of collecting data. The structure instrument was designed in three sections. Section A of the structured questionnaires obtained data based on absorptive capacity to corporate entrepreneurship and business sustainability development and performance of organization. To simplify the processing of the responses, a five-point Likert scale was used, From (1 strong disagree) to (5 strongly) the question

emphasizes the relationship between absorptive capacity and corporate entrepreneurship's influence on growth, innovation of sustainable ethical practices in business (Omofowa et al 2021). In furtherance, absorptive capacity sub-constructs and items were adapted and modified from the works of Tavani, Sharifi & Ismail (2014) along with dynamic capability theory (Parida & Ortquist, 2015, Garcia-Morales, Ruiz-Moreno & Liornes-Montes, 2007). Chief Executive Officer (CEO) was our key informant, due to the importance of the CEO in driving our study variable (Baer & Frese, 2003).

Section B elicited data on general corporate entrepreneurship business skills, knowledge, and experience in business management, It further asks questions on employees' commitment, how the entrepreneurs are committed to workplace reward and career development that would sustain and improve the quality of work-life (Omofowa, Omofowa, Nwachukwu & Minh, 2021). Also to simplify the processing of the responses, a five-point Likert scale was employed, from (1 strongly disagreed) to (5 strongly agreed). Section C measures sustainable business performance using five items from Santos & Brito (2012). The question requested a choice, using a five-point Likert scale from (1 strongly disagreed) to (5 strongly agreed) which best describes the firms' overall average performance compared to those of competitors in terms of business innovation, product innovation, process innovation, and identification of business opportunity. Best practices, corporate social responsibility, and ethical practices based on entrepreneurial perceptions, skills, and knowledge (Tan & Litschart, 1994, Dawes 1999, Richard, Devinney, Yip & Johnson, 2009, Wall, Michie, Patterson, Wood, Sheeran, Clegg & West 2004, Omofowa, Omofowa, Nwachukwu, & Mirch, 2021, Baer & Frese, 2003).

Procedures

A web-based survey was linked with e-mails to individuals to participate in the study. Web-based surveys are better than e-mail surveys, but when combined with emails it is a good means for inviting individuals to participate in web-based surveys (Andrews, Nonnecke & Preece, 2003). The e-survey creator software was used in collecting data from the respondent between January 2023 – June 2023. Respondents were allowed time to complete the questionnaires at their convenience, SMS messages were sent to target executives to ascertain first their willingness to participate in the survey and whether they are personally involved in absorptive capacity, corporate entrepreneurship strategies in their various firms and how they have been able to sustain these strategies leading business growth and development (Jimenez-Barrionueveo et al, 2011). We also promised them anonymity in order to protect their identities. No financial inducement was given to any of the respondents in order to complete their questionnaires. The respondents were informed that they were forced to withdraw from the study at any stage if they wished to do so. Thus, a maximum of fifty executive officers were randomly selected among 200 different organizational departments leading to 366 respondents. The survey was done after the COVID-19 lockdown in Nigeria. Three hundred and sixty-six questionnaires were administered to the respondents, 351 respondents completed and retained the questionnaires which accounted for an 87.5% response rate. Bryman & Bell (2015) and Mugenda & Mugenda (2009) suggested and affirmed that a feedback rate of 50% is adequate for data analysis, the study used several methods to analyze the possibility of the presence of non-response bias from the sample. The study achieved this by examining and comparing the attributes of the respondent firms who returned the questionnaires vis-à-vis the general population with the following features including skills, experiences, knowledge transfer, return on assets, return on sales and sale volume, performance and profitability, and also, non-response was tested by comparing the first third of the respondent to the last third with regard to the key variables and by comparing the respondents to non-respondent with regard to the key variable (Armstrong & Overton, 1977, Werner, Praxedes & Kim, 2007). We observed that the groups of early and late respondents did not differ statistically significantly. This implies that the sample was representative, a sample error of only 5% occurred. It shows the data appears to be sufficiently free of non-response bias. Reliability / Validity tests

KMO, Bartlett's, and Cronbach's alpha were used for testing the validity and reliability of the constructs. In this study, Cronbach's alpha was used to determine the internal reliability of the items in the questionnaires. According to Sekaran & Bougie (2010), Cronbach alpha is a reliability coefficient that shows how well the items in the questionnaires are positively correlated to each other. Cronbach alpha for absorptive capacity

(0.7811) corporate entrepreneurship (0.7052) sustainability of firms (0.7212) and the entire scale is () indicates the adequate reliability of the measurement instrument (Zikmund, Babin, Carr & Griffins, 2013). Thus, the instrument effectively captures the variables examined in this study. We conducted an exploratory factor analysis (EFA) using principal component analysis with Varimax rotation to see if the observed variables loaded together, consistent with our expectation, the variables were adequately correlated, and met the criteria for reliability. Kaiser-Meyer-Olkin and Bartlett's test is widely used in decision-making about sample adequacy. Thus, that is the reason why these two tests were used in this study. The KMO and BARTLET test of sampling adequacy was significant (KMO: 0.6140, P = 0.0000 < 0.05) and the communalities for each variable were high and above the recommended level of 0.5 (Hair, Black, Babin & Anderson, 2010). This means that the chosen variables are reliable and internally consistent presented in Table I are the items and their means, standard deviation, and commonalities.

Table 1: Reliability Assessment

Item	OBS	Sign	Item-test	Item-test	Average	Alpha
			correlation	correlation	Inter Item	
					covariance	
abscap	366	+	0.7839	0.4974	.4637997	0.7811
copent	366	+	0.7987	0.5595	.4307433	0.7052
superf	366	+	0.8828	0.7186	.2755221	0.7212
Test scale					.3900217	0.7871

Table 2: KAISER-MEYER-OLKIN (Measure of Sampling Adequacy) (overall) = 0.6140 .estat kmo

Variable	KMO
abscap	0.6814
copent	0.6214
superf	0.5748
Overall	0.6140

Table 3: Bartlett's Test Analysis of Variance

Source	SS	df	MS	F	Prob > F
Between groups	81.5847391	4	20.3961848	39.61	0.0000
Within groups	185.904332	361	.514970449		
Total	267.489071	365	.73284677		

Bartlett's test for equal variance: chi2(4) = 37.7225, prob>chi2 = 0.000

Handling Common Method Bias

According to Podbakoff, Mackenzie, Lee & Podsakoff (2003) affirm that common method bias occurs due to the bias associated to the measurement method rather than to the constructs, the measure represent. We assured respondents that their responses would be treated with the utmost confidentiality in order to reduce evaluation apprehension (Conway & Lance, 2010; Podsakoff et al, 2003). To mitigate the desirable response bias, we encouraged anonymity by creating an email for respondents and giving them access to the questionnaire using the created emails if they so wished, we also took steps to ensure the anonymity of respondent by promoting response in ensuring the respondent that the original copy of the result would be emailed back though at the aggregate data level. Our study was conducted at the firm level, the respondents were Analysts/Supervisors, lower, middle, and senior managers of the service, and engineering department, CEO, Chief Operating Officers, and Chief Financial Officers of the keyed department. We believe that these categories of employees are in the best position, experienced, and have spent a minimum of 6 years in the organizations to provide reliable and accurate information on the subject matter. Validity tests were performed on the constructs in consonance with their items by running EFA. The result shows that the established criteria were satisfied. We used a panel of six Academic from the University of Benin, and 7 professional experts from the Nigeria Institute of Management to review the statement questionnaires items in order to ascertain face validity, comprehensiveness, accuracy, and coherency during the process. We took measures again, to assure the respondent their anonymity during and after the study. This research study followed all ethical standards for research without direct contact with human or animal subjects. These steps ensured that the effect of common method bias was minimal.

Measurement of variables

In preparation for construct item generation extensive review of theoretical and empirical literature on Dynamic Capabilities Theory and knowledge-based view was conducted. All subjects were assessed using a five-point Likert measurement scale, with responses ranging from (1 strongly disagree) to (5 strongly agree). Absorptive capacity item and sub-explanation constructs were adapted and modified from the works of Tavani, Sharifi & Ismail, (2014) to suit the objective of our study. This scale includes five items such as "The search for relevant information concerning our industry is everyday business in our company; our management demands periodical cross-departmental meetings to interchange new development, problems and achievement; our management motivates the employees to use knowledge sources within our industry with thorough understanding the needs and expectation of our stakeholders; our employees are used to absorb new knowledge as well as to prepare it for further purpose and to make it available for internal performance and capabilities; our company regularly reconsidered technologies and adapt them according to new knowledge to answer changes in the environment in response to sustainable business development and growth. The Cronbach alpha statistic of absorptive capacity in this study was (0.7811). Corporate entrepreneurship items and sub-explanation constructs were adapted and modified from the works of (Costa, Fernandez & Dorrego, 2014; Engleman, Fracasso, Schmidt & Zen, 2017; Bacigalupo, Kampylis, Punie & Van-den-Brande, 2016) to suit the objective of the study, this scale includes five items such as entrepreneurs must develop strategic competencies for innovation aiming for the sustainability of its business and future competitive advantage; innovation metrics represents an explicit and important part of top entrepreneurial performance evaluation; entrepreneurs have autonomy and resources to develop their creativity through informal and parallel projects; management need a plan to identify and acquire the skills that are necessary to achieve sustainable performance goals; improvement throughout the organization are monitored, reviewed and championed by entrepreneurs. The Cronbach alpha statistic of corporate entrepreneurship in this study was (0.7052). For sustainable business performance; items and subexplanation constructs were adapted and modified from the works of (Cassol, Goncalo & Ruas, (2016) to suit the objectives of the study, the scale includes five items such as, "the company monitors social networks and uses formal and informal social networks, such as blogs, discussion forum, Twitter, Facebook, Orkut, and other media to monitor and evaluate the impact of launching its innovation; the company encourages employees to take initiative and behave innovatively in all of its different units/areas/departments; the company develops new production methods that would ensure sustainable performance; the company uses partners firms, financial and technological human resources to develop its portfolio of sustainable innovative projects; the company is improving its current production methods. The coefficient alpha reliability for all the scales (absorptive capacity, corporate entrepreneurship, and sustainable business performance) was (0.7871). Descriptive statistics and regression analysis techniques were employed to test our stated hypothesis Stata 13.0 was the statistical software tool used for the analyses conducted.

RESULTS AND DISCUSSIONS

The analysis of data in this study was largely quantitative in nature it involves a combination of both descriptive and inferential statistics. After data cleaning which entailed checking for errors in entry, descriptive statistics and frequencies were estimated for all variables, and information was presented in the form of frequency tables. Descriptive statistics were further used to provide a profile of respondent demographics. Descriptive statistics enable researchers to meaningfully describe the distribution of scores or measurements using a few indices (Saunders Lewis & Thornhill, 2007). Data frequency distribution was used in describing and explaining the situation as it is in the firm, in this respect, fundamental statistical measures (averages, frequencies, percentages) were used. Regression analysis is the most commonly used statistical technique in strategy research (Wiersema & Bowen, 2009). Regression and correlation analysis were used as the statistical tools to analyze the relationship and strength of association between the variables. In order to test. The linkage and effect of absorptive capacity, and corporate entrepreneurship on sustainable business performance and growth, we employed hierarchical regression analysis. The hypotheses were tested at a 0.05% significance level with 95% confidence, which is acceptable in non-clinical research studies. The statistical tool employed in this study is the Stata 13.0 statistical software package.

Table 4: Descriptive Statistics

Variables	Mean	p50	Max	Min	SD	n
abscap	3.86	4	5	1	0.92	366
copent	3.89	4	5	1	0.84	366
superf	4.16	4	5	2	0.85	366

Table 5: Correlation Matrix

Variables	abscap	copent	superf
Abscap	1.00		
Copent	0.35	1.00	
Superf	0.55	0.64	1.00

Table 6: Multiple Regression

			I abic 0. I	rumpic regression		
Source	SS	DF	MS	Numbers of obs	=	366
Model	141.05	2	70.527	F (2, 363)	=	202.49
Residual	126.43	363	0.348	Prob>F	=	0.0000
Total	267.49	365	0.732	R-squared	=	0.5273
				Adj R-squared	=	0.5247
				Root MSE	=	0.59017
Model	Coef.	Std. Err.	T	P>/E/ [95	%	Interval]
		1			.	

Model	Coef.	Std. Err.	T	P>/E/	[95%	Interval]
					Conf.	
abscap	0.339	0.036	9.46	0.000	0.268	0.409
copent	0.518	0.039	13.27	0.000	0.441	0.595
superf	0.834	0.168	4.95	0.000	0.502	1.165
_cons						

Table 7: Post Regression Test

Heteroskedasticity effects assessment using Breusch-Pagan/Cook-Weisberg test

Ho = Constant variance Variables = fitted values of 'cosat'

chi2(1) = 26.53 Prob>chi = 0.127

.estat ovtest

Ramsey RESET test using powers of the fitted values of cosat

Ho: model has ni omitted variables

F() 2.60 Prob>F = 0.0518

.estat ovtest

		1/VI
Variable	VIF	F
Abscap	1.14	0.87
Copent	1.14	0.87
Mean VIF	1.14	

Table 8: Principal Component Analysis

	Eigenvalu			
Component	e	Difference	Proportion	Cumulative
Comp 1	2.035	1.382	0.678	0.678
Comp 2	0.653	0.342	0.217	0.896
Comp 3	0.311		0.103	1.000

Source: Researcher's calculation using STATA ver.13.0

Discussion

The knowledge-based view and dynamic capabilities suggest that, as a rare, imitable, valuable, and nonsustainable resource, knowledge is the most critical asset developed, shared, and systematized by a firm for establishing a sustainable business performance and growth which automatically leads to a sustainable competitive advantage, furthermore, previous studies suggest that firms exploit such knowledge, through strategic capabilities, such as innovation or human resources, to improve performance (Nonaka & Von Krogh, 2009). In line with this view, we examine and focus on the links between absorptive capacity, corporate entrepreneurship, and sustainable business performance growth and development in the manufacturing companies context. The results obtained suggest that absorptive capacity positively influences sustainable business performance, and the findings are consistent with past studies (Jimenez-Barrionuew et al., 2019, Garay et al., 2017, Rodriguez & Dacunha, 2018, Balan-Vnuk, 2013, Zhai et al, 2018, Liu, Shen, Ding & Zhao, 2017 & Deshpande, 2018). However, our finding negates the result of (Medase & Barasa, 2019, Wang, Wang & Horng, 2010 & Hsu & Liau, 2014) that absorptive capacity does not influence sustainable business performance. Nevertheless, entrepreneurs need to develop creativity, innovativeness, and purposeful ideas to assess the impact of external knowledge, internal knowledge, opportunities, knowledge sharing, and transfer of knowledge, in order to gain a competitive advantage. Additional, specific capabilities and competencies such as the ability to link companies' ideas and concepts with quick information flow, specific and identify innovation with strategic focus, helping employees apply knowledge from one area of the company to problems and opportunities that arise in another section or department, opportunities to manage action, align them strategically are vital for managing an enterprise. The findings affirm the significant impact of corporate entrepreneurship and absorptive capacity on business sustainability performance. It was insightful to find that absorptive capacity influences sustainable business performance.

To the best of our knowledge. This result is somewhat novel, inadequate human competencies are challenges manufacturing companies need to overcome to survive (Wahid, Aziz & Halim, 2017). Besides, the success and survival of firms depend on employees' performance, cultural intelligence on innovation, research and development, human resource flexibility, ability, motivation, opportunity, and highperformance work system (Martinez-Sanchez, Vicente-Oliva & Perez-Perez, 2020, Yuwono, 2021 & Alkhazali Al-Daoud, Al shamaleh & Aledeinat, (2021) especially in manufacturing companies, as such sustainable business performance has a positive implication on absorptive capacity, corporate entrepreneurship as well as the entire company performance. Therefore, management should use internal and external knowledge acquired for business venturing and performance. This can improve the satisfaction level of employees, development, and relational networking between absorptive capacity development and corporate entrepreneurship performance leading to sustainable competitive advantage (Ge, Yang, Jing, Gao, Du & Zhou, 2018, Ade & Habib, 2016). Considering that corporate governance roles in absorptive capacity have received less attention (Asogwa et al, 2020). The present study extends Dynamic capability and adds to absorptive capacity literature in the emerging market context, particularly Nigeria. Additionally, the paper affirms that absorptive capacity is resourced knowledge that enhances sustainable business performance and the development of corporate entrepreneurial skills and experience to function, discharging duties, leading to sustainable competitive advantage. This study enriches the literature by giving insight into the role absorptive capacity plays in internal and external knowledge acquisition, and how it can be a valueadding entity when harmonized with detached interest. Firms must constantly make strategic decision, that requires specialist knowledge which can be exploited to enhance sustainable competitive advantage, commercialization of business ideas should be discouraged if the essence of the acquisition of such knowledge is not engaged in creative innovation, improvement of Dynamic capabilities of the organizational progress (Asogwa et al, 2020). In this context, absorptive capacity with the right dynamic capability can enhance knowledge acquisition to deal with uncertainty, ambiguity, and risk that may hinder business sustainability, performance, and growth. Manufacturing companies in emerging markets are faced with an unfavorable institutional environment that negates corporate governance (Asogwa et al., 2020), This has led to the emergence of corporate entrepreneur who craves absolute independence without violating policies, laws, rule, and regulation, to develop their own absorptive capacity that tends and yield significant effect on their financial status. Thus, it is important for corporate entrepreneurs to have financial and economic empowerment in order to help in speeding up knowledge transfer for innovation through network capability (Westphal, 1999) such empowerment translates into higher performance. Therefore, absorptive capacity needs to be robust, ability of the corporate entrepreneurs to realize this enhances sustainable business performance.

Theoretical Implication

This study provides the following three theoretical contributions;

Firstly, this analysis has important theoretical value for revealing the black box of the mechanism of absorptive capacity in organization, since the implementation of absorptive capacity is novel to business sustainability, that is based on acquisition of external knowledge, thereby altering the structure and routine of organization. This black box shows that when analyzing the importance of the different capabilities to firm sustainability, analyzing them individually might lead to omission or inconclusive findings. This study analyzes how business sustainability is affected by the joint effort of knowledge acquisition and corporate entrepreneurship thereby contributing to knowledge in the field of management. In the field of knowledge, the results of this study are relevant because they contribute new evidence on the importance of absorptive capacity to manufacturing companies. This study shows that absorptive capacity is not related to performance directly, but rather indirectly, through the influence of new knowledge search, capabilities, and self-renewal that alters the structure and routine of organization that leads to sustainable competitive advantage. This study considered the integration of internal and external knowledge in organization and introduced the research paradigm of dynamic capabilities which makes this study more theoretical.

Secondly, this study plays a vital role in resolving the divergence of the dynamic capabilities theory and improving the theory. At present, in absorptive capacity research, the scholar has debated whether absorptive capacity has a direct impact on business sustainability and dynamic capabilities. But have not been fully established. But have established that both absorptive capacity and dynamic capability have a direct impact on knowledge acquisition. This paper reveals the path and mechanism of knowledge application, its usefulness, and sustainability in organizations. This research not only contributes to the reconciliation of these divergent perspectives of existing dynamic capability theory but also fundamentally reveals the nature of dynamic capabilities which complements and perfect absorptive capacity and corporate entrepreneurship.

Finally, this paper clarifies the feasibility of absorptive capacity and corporate entrepreneurship under different levels of organization sustainability, the conclusion is specific. In concludes that absorptive capacity if well implemented, results in sustainable growth even in a turbulent external and internal environment, Manufacturing companies implementing absorptive capacity must renew and review their organization structure to give room for changes, this is basically the idea behind Dynamic capabilities. As a result, the conclusion of this study is specific. Making this study have integrity and wider applicability which play a very important role in improving and integrating absorptive capacity and corporate entrepreneurship, as well as expanding the applicability boundary of sustainable business performance.

Managerial Implication

This study reveals the implementation paths of absorptive capacity, which help entrepreneurs understand that the implementation of absorptive capacity will change the original organizational structure and routines, therefore Corporate entrepreneurs should pay attention to organizational routines, the ability to spot and optimize ideas and opportunities to improve sustainability of business performance, likewise, entrepreneurs with robust skills experience can make better understanding of dynamic capability in organization, this paper consider creative innovation and introduce dynamic capability, which is fundamental in recognizing and maintaining knowledge, management in organizations. Manufacturing companies can cultivate dynamic capabilities in two ways: firms should develop and implement knowledge sharing and transfer that supports their strategic initiative, if the firm wants to achieve optimal sustainable performance, secondly Corporate entrepreneurs should not underscore the importance of maintaining a policy manual that serves as a guide to the fulfillment of sustainable business performance, also, the policy manual should be updated regularly to address firms current business activities in the light of its operating environment. Arguably, absorptive

capacity provides support for employees to search, discover, revigorate, and implement external knowledge that would be beneficial to the firm sustainable growth. Arguably, revising ineffective standard processes and inefficient operational mechanism gives room for dynamic capability operations that leads to sustainable competitive advantage.

Finally, this study observed that dynamic capabilities are not direct sources of a firm's sustainable performance, so entrepreneurs should not blindly engage in it, but implementing dynamic capabilities should be carried out in a manner that is appropriate in each specific situation, knowing full well that organizational routine must be amended to give room for innovative capacity.

CONCLUSION AND RECOMMENDATIONS

The main purpose of this research is to explore the linkage path of absorptive capacity, and corporate entrepreneurship in sustainable business performance in manufacturing companies in Nigeria, to explain the linkage, we consider the theoretical concept of Dynamic capabilities theory as the anchor base. In this study, explaining the linkages of dynamic capacity in relation to knowledge development to absorptive capacity, and corporate entrepreneurship on sustainable business performance, we systematically explore the relationship among dynamic capacity, absorptive capacity, and corporate entrepreneurship. Based on this, the paper reaches the following conclusions. First, this study finds that absorptive capacity can help manufacturing companies to achieve sustainable competitive advantages, this conclusion indicates that manufacturing companies' absorptive capacity strategies should be in line with new economic trends, innovative, flexible, and demanding, although the implementation of an absorptive capacity strategy is risky based on the external knowledge acquired which might be novel, the effective formulation of absorptive capacity as strategy for manufacturing companies cannot be ignored if effective implementing, it will increase the potential value of company product, enhance acceptability by customers, improve business ethics and ultimately lead to sustainable business performances. Secondly, this study introduces the concept of dynamic capability and innovation to explore the implementation of absorptive capacity in an organization. It is found that the essence of corporate entrepreneurship lies in their ability to search for opportunities, renewal of organizational routines, cultural intelligence on innovation, routine amendment behaviour, and routine creation behaviour, and putting these into action lead to sustainable business performance. This conclusion plays a crucial role in revealing the essence of absorptive capacity. Finally, a systematic test networking was conducted to reveal in-depth, the relationship among absorptive capacity, corporate entrepreneurship, and sustainable business performance in manufacturing companies. It is concluded that manufacturing companies need to implement absorptive capacity through dynamic capability with effective corporate entrepreneurial practices leading to highly sustainable business performance. This conclusion not only reveals that the effective implementation of absorptive capacity needs to be selected according to the competence of the entrepreneurial skills, but also the entrepreneurs need to address deficiencies in dynamic capabilities theory and play a vital role in promoting the development of sustainable business performance.

References

- Ade, G. A., & Habib, A. (2010). Mediation Role of Absorptive Capacity on the Relationship between Relational Network and the Entrepreneurial Orientation of Tunisian Contractors. *Journal of Entrepreneurship and Organization Management*, 5, 179. doi:10.4172/2169-026x.1000179
- Alkhazali, Z., Al-Daoud, K., Alshamayleh, H., & Aledeinat, M. (2021). High-Performance Work System and Sustainable Development among Jordanian SMEs: Knowledge Sharing as a Mediator. Entrepreneurship and Sustainability Issues, 8(4), 280-290. https://jbsidoi.org/jebi/2021
- Andrews, D., Nonnecke, B., & Preece, J. (2003). Electronic Survey Methodology: A Case Study in Reaching a hand to involve Internet Users. *International Journal of Human-Computer Interaction*, 16(2), 185-210.
- Antoncic, B., & Hisrich, R. D. (2001). Intrapreneurship: Construct Refinement and Cross-Cultural Validation. *Journal of Business Venturing*, 16, 495-527.
- Armstrong, S., & Overton, T. S. (1977). Estimating Non-Response Bias in Mail Surveys. *Journal of Marketing Research*, 14(3), 396-402.

- Asogwa, C. I., Ugwu, O. C., Uzuagu, A. U., Abolarinwa, S. I., Okereke, G. K. O., & Anorue, H. C. (2020). Absorptive Capacity Mediating Roles. *Cogent Business and Management, 7*(1). https://doi.org/10.1080/23311975.2020.1839157
- Augier, M., & Teece, D. J. (2009). Dynamic Capabilities and the Role of Managers in Business Strategy and Economic Performance. *Organization Science*, 20(2), 410-421. https://doi.org/10.1287/orsc.1090.0424
- Azadegan, A. (2011). Benefiting from Supplier Operational Innovativeness: The Influence of Supplier Evaluation and Absorptive Capacity. *Journal of Supply Chain Management*, 47(2), 49-64.
- Babbie, E., & Mouton, J. (2001). The Practice of Social Research. Oxford University Press, Cape Town.
- Bacigalupo, M., Kampylis, Punie, Y., & Van-den-Brande, G. (2016). Entrecom the Entrepreneurship Competence Framework. *EUR 27939 EN*, Publication Office of the European Union, Luxembourg. https://publication.jrc.ec.europa.eu/repository/bitstream/101581/1/fin-a27939-en-n.pdf
- Baer, M., & Frese, M. (2003). Innovation is not enough: Climates for Initiation and Psychological Safety, Process Innovation and Firm Performance. *Journal of Organizational Behavior*, 24, 45-68.
- Barney, J. B. (2001). Resource-Based Theories of Competitive Advantage: A Ten-Year Retrospection on the Resource-Based View. *Journal of Management*, 27, 643-650. https://doi.org/10.1177/014920620102700602
- Birkinshaw, J., Hamel, G., & Mol, M. J. (2005). Management Innovation. *Academy of Management Review,* 33(4), 825-845.
- Breakwell, G. M., Hammond, S., & Fife-Schaw, C. (1995). Research Methods in Psychology. Sage Publications, London, UK.
- Bryman, A., & Bell, E. (2003). Business Research Methods. Oxford University Press, Oxford.
- Bryman, A., & Bell, E. (2015). Business Research Methods. Oxford University Press, New York, NY.
- Bryman, A., & Bell, E. (2015). Business Research Methods. Oxford University Press, U.S.A.
- Camison, C., & Fores, B. (2011). Knowledge Creation and Absorptive Capacity: The Effect of Intra-District Shared Competence. *Scandinavian Journal of Management*, 27, 66-86.
- Cassol, A., Gonçalo, C. R., & Ruas, R. L. (2016). Redefining the Relationship between Intellectual Capital and Innovation: The Mediating Role of Absorptive Capacity. *Brazilian Administrative Review, 13*(4), 1-25.
- Chalmers, D. M., & Balan-Vnuk, E. (2013). Innovating not for Profit Social Venturing: Exploring the Microfoundations of Internal and External Absorptive Capacity Routines. *International Small Business Journal*, 31(7), 785-810.
- Chang, S., Gong, Y., Way, S. A., & Jia, L. (2013). Flexibility-Oriented HRM Systems, Absorptive Capacity, Market Responsiveness, and Firm Innovativeness. *Journal of Management*, 39(2), 1924-1957. https://doi.org/10.1177/0149206312466145.
- Chen, Y. C., Li, P. C., & Evans, K. R. (2012). Effects of Interaction and Entrepreneurial Orientation on Organizational Performance: Insight into Market Driven and Market Driving. *Industrial Marketing Management*, 41, 1019-1034.
- Cohen, W., & Levinthal, D. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, 35(1), 128-152. https://doi.org/10.2307/2393553.
- Conway, J. M., & Lance, C. E. (2010). What Reviewers Should Expect from Authors: Regaining Common Method Bias in Organizational Research. *Journal of Business and Psychology*, 25(3), 325-334.
- Cook, S. D. N., & Brown, J. S. (1999). Porridging Epistemologies: The Generative Dance between Organizational Knowledge and Organizational Knowing. *Organization Science*, 10(4), 381-400.
- Costa, R. V., Fernandez, C. F. J., & Dorrego, P. F. (2014). Critical Elements for Product Innovation at Portuguese Innovation SMEs: An Intellectual Capital Perspective. *Knowledge Management Research and Practice*, 12(3), 322-338.
- Dawes, J. (1999). The Relationship between Subjective and Objective Company Performance Measures in Market Orientation Research: Further Empirical Evidence. *Marketing Bulletin*, 10(3), 65-75.
- De Boer, M., Van Den Bosch, F. A., & Volberda, H. W. (1999). Managing Organizational Knowledge Integration in the Emerging Multimedia Complex. *Journal of Management Studies, 36*, 379-398.

- Deloitte & Miti (2016). The 2016 Miti Annual Industry Report, 1-52. Retrieved from https://www.miti.org//publication/report.
- Deshpande, A. (2018). Relationship between Advanced Manufacturing Technologies, Absorptive Capacity, Mass Customization, Time to Market, and Financial and Market Performance: An Empirical Investigation. *Asia-Pacific Journal of Business Administration*, 10(1), 2-20. https://doi.org/10.1105/APJBA-03-2017-0024.
- Dobrzykowski, D. D., Leuschner, R., Hong, P. C., & Roh, J. J. (2016). Examining Absorptive Capacity in Supply Chains: Linking Responsive Strategy and Firm Performance. *Journal of Supply Chain Management*, 51(4), 3-28. https://doi.org/10.1111/jscm.12085.
- Dumphy, D. C., Griffiths, A., & Benn, S. (2007). Organizational Change for Corporate Sustainability: A Guide for Leaders and Change Agents of the Future. Routledge, New York.
- Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic Capabilities: What Are They? *Strategic Management Journal*, 21, 1105-1121.
- Engelman, R. M., Fracasso, E. M., Schmidt, S., & Zen, A. C. (2017). Intellectual Capital, Absorptive Capacity and Product Innovation. *Management Decision*, 55(3), 474-490. https://doi.org/10.1108/MD-05-2016-0315.
- Escribano, A., Fosfuri, A., & Tribo, J. A. (2009). Managing External Knowledge Flows: The Moderating Role of Absorptive Capacity. Research Policy, 38(1), 96-105. https://doi.org/10.1016/j.respol.2008.10.022.
- Fisher, D. C. (2010). Corporate Sustainability Planning Assessment Guide: A Comprehensive Organizational Assessment. Quality Press, Milwaukee, WI.
- Garay, L., Font, X., & Pereira-Moliner, J. (2017). Understanding Sustainability Behavior: The Relationship between Information Acquisition, Proactivity, and Performance. *Tourism Management*, 60, 418-429.
- García-Morales, V. J., Ruiz-Moreno, A., & Liornes-Montes, F. J. (2007). Effects of Technology Absorptive Capacity and Technology Proactiveness on Organizational Learning, Innovation, and Performance: An Empirical Examination. *Technology Analysis & Strategic Management*, 19, 527-558.
- García-Sánchez, E., García-Morales, V. J., & Martín-Rojas, R. (2018). Analysis of the Influence of the Environment, Stakeholder Integration Capability, Absorptive Capacity, and Technological Skill on Organizational Performance through Corporate Entrepreneurship. *International Entrepreneurship and Management Journal*, 14(2), 345-377. https://doi.org/10.1007/s11365-017-0436-9.
- Ge, B., Yang, Y., Jiang, D. Gao, Y., Du, X., & Zhou, T. (2018). An Empirical Study on Green Innovation Strategy and Sustainable Competitive Advantage. *Sustainability*, 10, 363. doi:10.3390/su10103631.
- Gove, P. G. (Ed.). (1961). Webster Third New International Dictionary, Unabridged. Merriam-Webster, Cambridge, MA, USA.
- Grant, R. M. (1996). Prospering in Dynamically Competitive Environments: Organizational Capability as Knowledge Integration. *Organizational Science*, 7(4), 375-387. https://doi.org/10.1287/orsc.7.4.375.
- Hair, J., Black, W., Babin, B., & Anderson, R. (2010). *Multivariable Data Analysis* (7th ed.). Prentice Hall, Eaglewood Cliffs.
- Hart, T. A., Gilstrap, J. B., & Bolino, M. C. (2016). Organizational Citizenship Behavior and the Enhancement of Absorptive Capacity. *Journal of Business Research*, 69(10), 3981-3988. https://doi.org/10.1016/j.jbusres.2016.04.003.
- Hsieh, Y. H., & Chou, Y. H. (2018). Modeling the Impact of Service Innovation for Small and Medium Enterprises: A System Dynamic Approach. *Simulation Modelling Practice and Theory, 82*(1), 84-102. https://doi.org/10.1080/10705519909540118.
- Hsu, C. L., & Liao, Y. C. (2014). Sustainability Strategies and Reverse Logistics Management: A Contingent Link. In *2014 IEEE International Conference on Management of Innovation and Technology* (pp. 500-507). Singapore. Catalog number: CFP14795-POD.
- Huse, M., Neubaum, D. O., & Gabrielsson, J. (2005). Corporate Innovation and Competitive Environment. International Entrepreneurship and Management Journal, 1, 313-333.
- Jansen, J. J. P., Van Den Bosch, F. A. J., & Volberda, H. W. (2005). Managing Potential and Realized Absorptive Capacity: How Organizational Antecedents Matter. *Academy of Management Journal*, 48, 999-1015.

- Jimenez-Barrionuevo, M. M., García-Morales, V. J., & Molins, L. M. (2011). Validation of an Instrument to Measure Absorptive Capacity. *Technovation*, 31(5-6), 190-202. https://doi.org/10.1016/technovation.2010.12.002.
- Jiraporn, P., Lee, S. M., Park, K. J., & Song, H. (2018). How do Independent Directors Influence Innovation Productivity? A Quasi-Natural Experiment. *Applied Economics Letters*, 25(7), 4335-441.
- Kale, E., Aknar, A., & Basar, O. (2019). Absorptive Capacity and Firm Performance: The Mediating Role of Strategic Agility. *International Journal of Hospitality Management*, 78, 276-283.
- Kim, S., Kandampully, J., & Bilgihan, A. (2018). The Influence of eWOM Communication: An Application of Online Social Network Framework. *Computers in Human Behavior*, 80(1), 243-254. https://doi.org/10.1016/j.chb
- Kohtamaki, M., Heimonen, J., & Parida, U. (2019). The Non-Linear Relationship between Entrepreneurial Orientation and Sale Growth: The Moderating Effects of Slack Resources and Absorptive Capacity. *Journal of Business Research*, 100, 100-110.
- Koo, K., & Kim, W. Y. (2019). Do Lucky CEOs Avoid Innovation? *Applied Economics Letters, 26*(10), 795-798. https://doi.org/10.1080/13504857.2018.1497842 [Taylor and Francis Online] [Web of Science] [Google Scholar]
- Koo, K. (2019). Do Not Change Horse: Specialist CEOs Enhance Innovation. *Technology Analysis and Strategic Management*, 31(8), 875-887. https://doi.org/10.1080/09537325.2019.15666525 [Taylor and Francis Online] [Web of Science] [Google Scholar]
- Kuratko, D. F., McMullen, J. S., Hornsby, J. Z., & Jackson, C. (2017). Is Your Organization Conducive to the Continuous Creation of Social Value? Toward a Social Corporate Entrepreneurship Scale. *Business Horizons*, 60, 271-283. [Crossref]
- Laage-Hellman, J., Landqvist, M., & Lind, F. (Year). Technology-based Startups Collaborate with Customers in Product Development. *Industrial Marketing Management*, 70(1), 13-24. https://doi.org/10.1016/j.indmarman.
- Lane, P., & Lubatkin, M. (1998). Relative Absorptive Capacity and Inter-organizational Learning. *Strategic Management Journal*, 19(5), 461-477.
- Lane, P. I., Koka, B. B., & Pathak, S. (2006). The Reification of Absorptive Capacity: A Critical Review and Rejuvenation of the Construct. *Academy of Management Review*, 31(4), 833-863.
- Levi-Jaksic, M., Radovanovic, N., & Radojicic, Z. (2013). Absorptive Capacity Constituent in Knowledge Intensive Industries in Serbia. Zbornik Radova Ekonomskog Fakulteta u Rijeci: Časopis za Ekonomsku Teoriju i Praksu, 31(2), 253-278.
- Liao, J., Welsch, H., & Stoica, M. (2003). Organizational Absorptive Capacity and Responsiveness: An Empirical Investigation of Growth-oriented SMEs. *Entrepreneurship Theory and Practice*, 28(1), 63-85.
- Lim, P. (2008). Theory and Practice of Simultaneous Data Reconciliation and Gross Error Detection for Chemical Processes. *Computers and Chemical Engineering*, 428, 381-402.
- Lincoln, Y. S., & Guba, E. G. (1985). Naturalistic Inquiry. Sage, Beverly Hills, CA.
- Lis, A., & Sudolska, A. (2020). Absorptive Capacity and Its Role for Company Growth and Competitive Advantage: The Case of Freudenthal Automotive Torun Company. *Journal of Entrepreneurship, Management, and Innovation, 16*(1). https://temi.edu.pl//11-article-bstract/41 [Google Scholar].
- Liu, L., Zhang, M., & Ye, W. (2019). The Adoption of Sustainable Practices: A Supplier's Perspective. *Journal of Environmental Management*, 232, 692-701.
- Liu, X., Shen, M., Ding, W., & Zhao, X. (2017). The Strength, Absorptive Capacity, and Innovation Performance in Chinese Manufacturing Industries. *Nankai Business Review International*, 118(6), 475-494. https://doi.org/10.1108/NBRI-01-2017-0002
- Lozano, R., & Huisingh, D. (2011). Inter-Linking Issues and Dimensions in Sustainability Reporting. *Journal of Cleaner Production*, 19(2-3), 99-107. doi:10.1016/j.jclepro.2010.01.004.
- Lu, I. Y., Kuo, T., Lin, T. S., Tzeng, G. H., & Huang, S. L. (2016). Multicriteria Decision Analysis to Develop Effective Sustainable Development Strategies for Enhancing Competitive Advantage: Case of the TFT-LCD Industry in Taiwan. *Sustainability*, 8, 646. [Crossref]
- Lumpkin, G. T., & Dess, G. (1996). Clarifying the Entrepreneurial Orientation Construct and Linking it to Performance. *Academy of Management Review, 21*(1), 135-172. https://doi.org/10.5465/Amn.9602161508.

- Lyles, M. A., & Salk, J. E. (1996). Knowledge Acquisition from Foreign Parents in International Joint Ventures: An Empirical Examination in the Hungarian Context. *Journal of International Business Studies*, 27(5), 877-903.
- Magdalena-Jimenez-Barrionuero, M., Molina Luis, M., & Victor J. Garcia-Morales (2019). Combined Influence of Absorptive Capacity and Corporate Entrepreneurship on Performance Sustainability. *MDPI*, 11, 3034. doi:10.3390/5411113034 www.mdpi.com/journal/sustainability.
- Malvestiti, R., Esieves, D. B. L., & Dandolini, G. A. (2020). Absorptive Capacity as Feedback on the Sustainability of Organizations. Revista de Administração Mackenzie, 22(1), 1-28. doi:10.1590.1678-6971/CRMR210073.
- Maqtari, A. F., Farhan, N. H., Al-Hattami, H. M., & Khalid, A. S. D. (2020). Impact of Country-level Corporate Governance on Entrepreneurial Conditions. *Cogent Business and Management, 7*(1), 1797261. https://doi.org/10.1080/23311975.2020.1797261 [Taylor and Francis Online] [Web of Science] [Google Scholar].
- Martinez-Sanchez, A., Vicente-Olivia, S., & Perez-Perez, M. (2020). The Relationship between Research and Development, the Absorptive Capacity of Knowledge, Human Resource Flexibility, and Innovation: Indicator Effects on Industrial Firms. *Journal of Business Research*, 118, 431-440. https://doi.org/10.1016/j.jbusres.2020.07.014.
- McDaniel, C., Lamb, C. W., & Hair, J. F. (2008). *Introduction to Marketing, 9th Ed.* Thompson South-Western, Australia.
- Meadows, D. H., Meadows, D. L., Randers, J., & Behrens, W. W. III (1972). *The Limits to Growth*. Universe Books, New York, USA.
- Medase, K., & Barase, L. (2019). Absorptive Capacity, Marketing Capabilities, and Innovation. *Management, 22*(5), 790-820. https://doi.org/10.1108/EJIM-09-2018-019 [Crossref] [Web of Science] [Google Scholar].
- Miller, D. (1983). The Correlates of Entrepreneurship in Three Types of Firms. *Management Science*, 29(7), 770-791. https://doi.org/10.1287/mnsl.29.7.770 [Crossref]
- Morabito, V. (2013). Organizational Absorptive Capacity and the Use of Information. In *Business Technology Organization: Managing Digital Information Technology for Value Creation The SIGMA Approach* (pp. 129-142). Springer, Berlin, Heidelberg.
- Morgan, D. L. (2007). Paradigms Lost and Pragmatism Required. *Journal of Mixed Methods Research*, 1(1), 48-76.
- Mu, J., Thomas, E., Peng, G., & Di Benedetto, A. (2017). Strategic Orientation and New Product Development Performance: The Role of Networking Capability and Networking Ability. *Industrial Marketing Management*, 64(1), 187-201. https://doi.org/10.1016/j.indmarman.2016.09.007.
- Mugenda, O. M., & Mugenda, A. L. (2009). Business Research Methods: Quantitative and Qualitative Approaches. ACTS, Nairobi.
- Munyanyi, W., & Pool, D. (2019). The Influence of Absorptive Capacity and Networking Capabilities on Small and Medium Scale Enterprises. *South African Journal of Entrepreneurship and Small Business Management*, 11(1), 92-93. https://doi.org/10.4102/sajesbm.v11i1.23.
- Murray, J. Y., & Kotebe, M. (1999). Sourcing Strategies of U.S. Service Companies: A Modified Transaction-Cost Analysis. *Strategic Management Journal*, 20(9), 791-809. https://doi.org/10.1002/(sici)/1097-0266(199909)20:9
- Nason, R. S., & Wiklund, J. (2018). An Assessment of Resource-Based Theorizing on Firm Growth and Suggestions for the Future. *Journal of Management*, 44(1), 32-60. https://doi.org/10.1177/0149206315610635.
- Nonaka, I., & Takeuchi, H. (1995). The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation. Oxford University Press, UK.
- Nonaka, I., & Von-Krogh, G. (2009). Tacit Knowledge and Knowledge Conversion: Controversy and Advancement in Organizational Knowledge Creation Theory. https://doi.org/10.1287/orsc.1080.0412.
- Oliver, C., & Holzinger, I. (2008). The Effectiveness of Strategic Political Management: A Dynamic Capabilities Framework. *Academy of Management Review, 33*, 496-520. [Crossref]

- Omofowa, M. S., Omofowa, S., Nwachukuwu, C., & Minh, V. H. (2021). Linking Employees' Commitment, Workplace Rewards, and Career Development to Quality of Work Life. *Turkish Journal of Computer and Mathematics Education*, 12(7), 459-467.
- Omofowa, S., Akhidue-Ogogo, R. O., Nwachukwu, C., & Minhlam, T. (2021, June 07-08). 13th CAC, 2021. Chennai, India. doi:10.41108/eai.7-6-2021.2308606.
- Omofowa, S., & Omofowa, M. S. (2023). Personal Initiatives and Social Entrepreneurial Wealth Creation in South-South Region of Nigeria. *Lafia Journal of Economics and Management Sciences (LAJEMS)*, 8(1), 187-211.
- Organização das Nações Unidas (1987). Definição de Sustentabilidade. Recuperado de https://brasil.un.org/pt-br/91223-onu-e-o-meio-ambiente.
- Osburg, T. (2013). Social Innovation to Drive Corporate Sustainability. In *Social Innovation* (pp. 13-22). Springer Berlin Heidelberg.
- Parida, V., & Ortqvist, D. (2015). Interactive Effects of Network Capability, ICT Capability, and Financial Slack on Technology-Based Small Firm Innovation Performance. *Journal of Small Business Management*, 53(1), 278-298. https://org/10.1111/jsbm.12191.
- Patterson, W., & Ambrosini, V. (2015). Configurational Absorptive Capacity as a Key Process for Research-Intensive Firms. *Technovation*, *36*, 77-89. https://doi.org/10.1016/j.technovation.2014.10.003.
- Peteraf, M. A. (1993). The Cornerstone of Competitive Advantage: A Resource-Based View. *Strategic Management Journal*, 14(3), 179-191.
- Petti, C., & Zhang, S. (2013). Technological Entrepreneurship and Absorptive Capacity in Guangdong Technology Firms. *Measuring Business Excellence*, 17(2), 61-71. https://doi.org/10.1108/13683041311329447.
- Picoli, F. R., & Takahashi, A. (2016). Capacidade de absorção, Aprendizagem Organizacional e Mecanismos de Integração Social. Revista de Administração Contemporânea, 20(1), 1-20.
- Podsakoff, P. M., Mackenzie, S. M., Lee, J., & Podsakoff, N. P. (2003). Common Method Variance in Behavioral Research: A Critical Review of the Literature and Recommended Remedies. *Journal of Applied Psychology*, 88(5), 879-903.
- Polit, D. F., & Beck, C. T. (2012). Nursing Research: Generating and Assessing Evidence for Nursing Practice (9th ed.). Wolter Kluwer/Lippincott Williams and Wilkins, Philadelphia.
- Porter, M. (2008). The Five Competitive Forces That Shape Strategy. *Harvard Business Review, 86*(1), 78-93. Reichardt, C. S., & Rallis, S. F. (1994). Qualitative and Quantitative Inquiries Are Not Incompatible: A Call for a New Partnership. *New Directions for Program Evaluation, (61)*, 85-91.
- Richard, P. J., Devinney, T. M., Yip, G. S., & Johnson, G. (2009). Measuring Organizational Performance: Towards Methodological Best Practices. *Journal of Management*, 15(3), 718-804.
- Rodriguez, L., & Da Cunha, C. (2018). Impact of Big Data Analysis and Absorptive Capacity in Sustainable Supply Chain Innovation: A Conceptual Framework. *Journal of Industrial Engineering and Management,* 11(2), 151-161.
- Saiz, L., Perez, Miguel, D., & Manzand del Campo, M. A. (2018). The Knowledge Absorptive Capacity to Improve Cooperation and Innovation in the Firm. *Journal of Industrial Engineering and Management,* 11(2), 290. https://doi.org/10.3926/jiem.2505.
- Santos, J. B., & Brito, L. A. (2012). Towards a Subjective Measurement Model for Firm Performance. Brazilian Administrative Review, 9(6), 95-117.
- Saunders, M., Lewis, P. M., & Thornhill, A. (2007). Research Methods for Business Students (4th ed.). Prentice Hall, Pearson Education Limited, Harlow.
- Sekaran, U., & Bougie, R. (2010). Research Methods for Business: A Skill-Building Approach (5th ed.). John Wiley and Sons, New Jersey.
- Sharma, P., & Chrisman, S. J. J. (2007). Towards a Reconciliation of the Definitional Issues in the Field of Corporate Entrepreneurship. In *Entrepreneurship: Concepts, Theory and Perspective* (Cuerro, A., Ribeiro, D., Roig, S., Eds.), Springer Berlin/Heidelberg, Germany, pp. 83-103.
- Shapiro, D., Tang, Y., Wang, M., & Zhang, W. (2015). The Effects of Corporate Governance and Ownership on the Innovation Performance of Chinese SMEs. *Journal of Chinese Economic and Business Studies*, 13(4), 311-335. https://doi.org/10.1080/14765284.2015.1090267.

- Solis-Molina, M., Hernandez-Espallardo, M., & Rodriguez-Orejuela. (2018). Performance Implications of Organizational Ambidexterity Versus Specialization in Exploitation or Exploration: The Role of Absorptive Capacity. *Journal of Business Research*, 91, 181-194.
- Sousa, V. D., Driessnack, M., & Mendes, I. A. C. (2007). An Overview of Research Design Relevant to Nursing: Part 1, Quantitative Research Designs. Revista Latino-Americana de Enfermagem, 15(3), 502-507.
- Szulanski, G. (1996). Exploring Internal Stickiness: Impediments to the Transfer of Best Practice Within the Firm. *Strategic Management Journal*, 17, 27-43.
- Talbot, A. L. (1995). Principles and Practices of Nursing Research. Mosby, St. Louis, Missouri.
- Tan, J. J., & Litschert, R. J. (1994). Environment-Strategy Relationship and Its Performance Implications: An Empirical Study of the Chinese Electronics Industry. *Strategic Management Journal*, 15(1), 1-20.
- Tashakkori, A., & Teddlie, C. (2010). Sage Handbook of Mixed Methods in Social and Behavioral Research. Sage Publication, Thousand Oaks, CA.
- Tavani, S. N., Sharifi, H., & Ismail, H. S. (2014). A Study of the Contingency Relationship between Supplier Involvement, Absorptive Capacity and Agile Product Innovation. *International Journal of Operations and Production Management*, 34(1), 65-92.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic Capabilities and Strategic Management. *Strategy Management Journal*, 18, 509-533.
- Tehseen, S., & Ramayah, T. (2015). Entrepreneurial Competencies with SMEs Business Success: The Contingent Role of External Integration. *Mediterranean Journal of Social Sciences*, 6(1), 50-61.
- Tidd, J., & Bessant, J. (2018). Innovation Management Challenges: From Fads to Fundamentals. *International Journal of Innovation Management*, 22(05), 1-13.
- Todorova, G., & Durisin, B. (2007). Absorptive Capacity: Valuing a Reconceptualization. *Academy of Management Review*, 32, 774-786.
- Tzokas, N., Kim, Y. A., Akbar, H., & Al-Dajani, H. (2015). Absorptive Capacity and Performance: The Role of Customer Relationship and Technological Capabilities in High-Tech SMEs. *Industrial Marketing Management*, 47(1), 134-142. https://doi.org/10.1016/j.indmarman.
- Unceta, A., Castro-Spila, J., & Fronti, J. G. (2010). Social Innovation Indicators. *Innovation: The European Journal of Social Science*, 29(2).
- Upstill-Goddard, J., Glass, J., Dainty, A., & Nicholson, I. (2016). Implementing Sustainability in Small and Medium-Sized Construction Firms. *Engineering Construction and Architectural Management*, 23(4), 407-427
- Van den Bosch, F. A. J., Volberda, H. W., & De Boer, M. (1999). Co-evolution of Firm Absorptive Capacity and Knowledge Environment: Organizational Forms and Combinative Capabilities. *Organizational Science*, 10, 551-568.
- Verma, V., Bharadwaj, S. S., & Nanda, M. (2017). Comparing Agility and Absorptive Capacity for Superior Firm Performance in a Dynamic Environment. *International Journal of Business Environment*, 9, 1-7.
- Volberda, H. W., Foss, N. J., & Lyles, M. A. (2010). Absorbing the Concept of Absorptive Capacity: How to Realize Its Potential in the Organization Field. *Organization Science*, 21(4), 931-957. https://doi.org/10.1287/orsc.1090.0503.
- Wahid, N. A., Aziz, N. N. A., & Halim, R. A. (2017). Networking and Innovation Performance of Microenterprises in Malaysia: The Moderating Effect of Geographical Location. *Pertanika Journal of Social Science and Humanities*, 25(5), 281-292.
- Wales, W. J., Parida, V., & Patel, P. C. (2013). Too Much of a Good Thing? Absorptive Capacity, Firm Performance, and the Moderating Role of Entrepreneurial Orientation. *Strategic Management Journal*, 34(5), 622-633.
- Wall, T. D., Michie, J., Patterson, M., Wood, S. J., Sheeran, M. I., Clegg, C. W., & West, M. A. (2004). On the Validity of Subjective Measures of Company Performance. *Personnel Psychology*, 57(1), 95-118.
- Wang, Y., Wang, Y., & Horng, R. (2010). Learning and Innovation in Small and Medium Enterprises.

 *Industrial Management & Data Systems, 110(2), 175-192.

 https://doi.org/10.1108/02635571011020296.
- Werner, S., Praxedes, M., & Kim, H. G. (2007). The Reporting of Non-Response Analysis in Survey Research. *Organizational Research Methods*, 10(2), 287-295.

- Westphal, J. D. (1999). Collaboration in the Boardroom: Behavioral and Performance Consequences of CEO-Board Social Ties. *Academy of Management Journal*, 42(1), 7-24. <u>Link</u>
- Wiersema, M. F., & Bowen, H. P. (2009). The Use of Limited Dependent Variable Techniques in Strategy Research: Issues and Methods. *Strategic Management Journal*, 30(6), 679-692.
- Xie, X., Zou, H., & Qi, G. (2018). Knowledge Absorptive Capacity and Innovation Performance in Hightech Companies: A Multi-Mediating Analysis. *Journal of Business Research*, 88(1), 289-297. DOI
- Xiong, G., & Bharadwaj, S. (2011). Social Capital of Young Technological Firms and Their IPR Values: The Complementary Role of Relevance Absorptive Capacity. *Journal of Marketing*, 75(6), 87-104.
- Xue, M., Boadu, F., & Xie, Y. (2019). The Penetration of Green Innovation on Firm Performance: Effects of Absorptive Capacity and Managerial Environment Concern. *Sustainability*, 11(9), 2455.
- Yu, C., Zhang, Z., Lin, C., & Wu, Y. J. (2017). Knowledge Creation Process and Sustainable Competitive Advantages: The Role of Technological Innovation Capabilities. *Sustainability*, 9, 2280.
- Yuwono, W. (2021). Empirical Analysis of Intellectual Capital, Potential Absorptive Capacity, Realized Absorption Capacity, and Cultural Intelligence on Innovation: Growing Science. MANAGEMENT SCIENCE LETTERS, 11, 1399-1406.
- Zahra, S. A., & George, G. (2002). Absorptive Capacity: A Review, Reconceptualization, and Extension. Academy of Management Review, 27, 185-203.
- Zali, M. R., Bastian, B. L., & Qureshi, S. (2013). Promoting Innovation in the MENA Region: The Role of Social Norms and Individual Factors in Entrepreneurial Networks. *International Journal of Business and Globalization*, 11(4), 413-420.
- Zhai, Y., & Chen, Q. (2018). An Empirical Study on Entrepreneurial Orientation, Absorptive Capacity, and SMEs' Innovation Performance: A Sustainable Perspective. *Sustainability*, 10(2), 314.
- Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffins, M. (2013). *Business Research Methods* (9th ed.). South-Western, Cengage Learning, USA.
- Zollo, M., & Winter, S. G. (2002). Deliberate Learning and the Evolution of Dynamic Capabilities. Organizational Science, 13, 339-351.