

AAMC 2019
The 13th Asian Academy of Management International
Conference 2019

SUSTAINABLE DEVELOPMENT: AN INTEGRATED
FRAMEWORK OF SUSTAINABLE ENTREPRENEURIAL
COMPETENCIES, PRACTICES, AND PERFORMANCE

Qaisar Iqbal (a)*, Noor Hazlina Ahmad (b)
*Corresponding author

(a) School of Management, Universiti Sains Malaysia, Penang, Malaysia, qaisariqbal@student.usm.my

(b) School of Management, Universiti Sains Malaysia, Penang, Malaysia, hasliza@usm.my

Abstract

Today, the world has recognized and acknowledged the disruptive climate changes, massive extinction of biodiversity, and the prevalent nature of the population. So, there is a dire need to perform sustainably to cope with these challenges. Government regulations and increasing pressure from different stakeholders are forcing firms to deal with sustainable development. Organizations need to evaluate sustainable challenges as an opportunity which comes under the domain of entrepreneurship. Based on the Resource-based view and knowledge-based view, this study have proposed that small and medium enterprises can enhance sustainable performance based on sustainable competencies through sustainable practices. This study has suggested the mediating role of sustainable practices in the context of sustainable development. Furthermore, empirical studies can be conducted to empirically test these propositions in the context of small and medium firms with reference to sustainable development goals. Additionally, further research could be undertaken to investigate the relationship between six dimensions of sustainable entrepreneurial competencies. The findings may also be useful to practitioners to sharpen their insights i.e. how to make sustainable entrepreneurial practices more effective.

2357-1330 © 2020 Published by European Publisher.

Keywords: Competencies, entrepreneurship, performance, SMEs, sustainability.



1. Introduction

Sustainable development has emerged globally as a significant phenomenon in this decade (Schaltegger & Wagner, 2011). Government regulations and increasing pressure from different stakeholders are forcing firms to deal with sustainable development (Hofmann et al., 2012; Iqbal et al., 2020). Sustainable development has potential to influence business in future (Iqbal, 2018). Organizations need to evaluate sustainable challenges as an opportunity which comes under the domain of entrepreneurship. Yet, entrepreneurship is often associated with unsustainability because of its economic-driven production-oriented attributes (Lans et al., 2014). This point of view absolutely neglects the creation of new opportunity generated through sustainable performance. The concepts of social entrepreneur and ecopreneur were introduced because of the linkage between sustainable development and entrepreneurship. The social entrepreneur aims are to create social value through economic goals whereas, the ecopreneur focuses on environmental opportunities (Zahra et al., 2009). On the other side, sustainable entrepreneurs have been introduced to overarch the contribution of entrepreneurial endeavors from social, economic, and environmental aspects i.e. sustainable development (Schaltegger & Wagner, 2011).

1.1. Literature review

1.1.1. Sustainable entrepreneurial practices

The sustainable entrepreneurship has emerged as a novel topic at the juncture of entrepreneurship and sustainable management. Diverse academic researchers have made attempt to explore this novel area (Binder & Belz, 2015; Thompson et al., 2011). Two viewpoints in the context of sustainable entrepreneurship are considered. Scholars of sustainable management journals consider entrepreneurial activities under the umbrella of sustainable developments (Parrish & Foxon, 2006). Contrary to that, researchers also view that opportunities and orientation of the sustainability and entrepreneurship go in parallel (Patzelt & Shepherd, 2011). In congruence to the latter, sustainable entrepreneurship concerns about the identification, development, and exploitation of business opportunities through balancing triple bottom lines (Belz & Binder, 2017).

Sustainable entrepreneurship focuses on the balancing of these goals i.e. social, economic, and ecological. Such diversity of goals lead to the innovative behaviors and may drive opportunity recognition, development, and exploitation activities among employees. Sustainable entrepreneurship ensures to run smooth business operations without any hazard to future generations resources (World Commission on Environment and Development, 1987). Such entrepreneurial practices takes into account intragenerational equity and intergenerational equity (Thompson et al., 2011). Such entrepreneurship is applicable to the profit mission and hybrid structure. So far, a few studies have explored sustainable entrepreneurship (Belz & Binder, 2017). Extant research has suggested exploring this nascent research area (Belz & Binder, 2017).

Despite the significance of sustainable entrepreneurship, there are so far seven empirical studies in ecological and social context where opportunities recognition, development and exploitations were brought into discussion (Belz & Binder, 2017; Choi & Majumdar, 2014; Corner & Ho, 2010; Keskin et al., 2013; Perrini et al., 2010; Robinson, 2006; Shaw & Carter, 2007). All studies have employed a qualitative approach to their investigation. Besides Choi and Majumdar (2014), all researchers have taken those

organization that is only concerned with double bottom line i.e. economic and environmental or social goals.

All studies except Perrini et al. (2010) and Belz and Binder (2017), have explored the sustainable entrepreneurial process with respect to opportunity recognition, development, and exploitation in parallel with sustainable performance. Perrini et al. (2010) have investigated the non-profit organization through balancing two goals i.e. economic and social or environmental. Belz and Binder (2017) has contributed to the literature by providing six phases of sustainable entrepreneurial process. According to Belz and Binder (2017), ecological, environmental and social goals are accomplished sequentially, not simultaneously.

Sustainable Entrepreneurship involves recognition of certain social and ecological problems in the professional or private domain. According to Cohen and Winn (2007), market imperfection actually generates entrepreneurial opportunities. Market imperfections comprise polluted information, flawed pricing mechanisms and inefficient firms (Cohen & Winn, 2007). Sustainable entrepreneurs deem market imperfections as opportunities. So, sustainable entrepreneurial practices involve opportunity recognition based on economic or social problems. The sustainability ventures highly rely on the sustainability goals i.e. how organizations convert goals into products with attributes valued by clients (Keskin et al., 2013). Similarly, Dangelico and Pujari (2010) have emphasized over the incorporation of the environmental and traditional attributes such as quality and price into sustainable products. Furthermore, social and ecological attributes significantly contribute to sustainable ventures. Sustainable entrepreneurship is highly related to other concepts like social entrepreneurship and ecopreneurship. Social entrepreneurship considers only economic and social values (Choi & Majumdar, 2014) whereas, ecopreneur only take into account economic and ecological goals (Schaltegger & Wagner, 2011). Without the integration of the third attribute, there is no sustainable entrepreneurship because of a triple bottom line characteristic of sustainable development. Entrepreneurs have always limited financial resources (Jonsson & Lindbergh, 2013). Sustainable entrepreneurs must draw on a variety of financial resources securing funding for their sustainable ventures to obtain seed capital. As compared to sustainable entrepreneurs, hybrid organization are at ease to secure funding. Sustainable Entrepreneurial practices also involve penetrating into a sustainable market by introducing new sustainable product or service (Belz & Binder, 2017).

1.1.2. Sustainable competencies

Knowledge, skills, and attitudes have vital importance to sustainable development (Ploum et al., 2018). Competency comprises of skills, attitude, and knowledge (Mulder, 2014). Competency enables employees to accomplish their job and solve problems relevant to challenges and opportunities (Barth et al., 2007). Sustainability challenges are meaningful to a specific work environment. Sustainable performance drives the success for change agents in their workplace (Hesselbarth & Schaltegger, 2014). Therefore, the work environment has substantial importance to sustainable development (Ploum et al., 2018).

Change agents in the context of the work environment with respect to sustainable development may include sustainable entrepreneur, sustainable intrapreneurs, and corporate social responsible managers. According to Hesselbarth and Schaltegger (2014), competencies related to the specific change agents are derived from the combination of the competencies of entrepreneurship, sustainability and management literature. The literature on competencies from a commercial outlook is very scant (Ploum et al., 2018). So

far, Extent literature has revealed that six studies are relevant to sustainable competencies of change agent in a certain work environment i.e. (Hesselbarth & Schaltegger, 2014; Lans et al., 2014; Osagie et al., 2016; Ploum et al., 2018; Wesselink et al., 2015). Hesselbarth and Schaltegger (2014), Osagie et al. (2016), and Wesselink et al. (2015) have focused on the competencies from the standpoint of corporate social responsibility. Lans et al. (2014) have explored sustainable competencies in the domain of would-be entrepreneurs i.e. those individuals who intend to be sustainable entrepreneurs. Ploum et al. (2018) have explained about competencies in relation to sustainable entrepreneurs.

1.1.2.1. Individual competence

Knowledge, skills, and attitude turn into competency which enables individuals to perform a task successfully (Wesselink et al., 2015). Competencies are elaborated with reference to behavioral-functionalistic approach, the generic approach, and the comprehensive approach. The first one defines competency as the personal attributes that are based on the detail job descriptions in relation to the specific job (Sandberg, 2000). According to Boyatzis (2008), the generic approach defines competency as an enduring characteristic of people that enables them to deliver effectively. The generic approach takes on board knowledge, attitude, skills, and demographic characteristics necessary for optimum work performance. Competencies under the generic approach are determined by comparing high performers with low performances (Osagie et al., 2016). Being highly generic, these competencies loose context specificity (Ploum et al., 2018). The multimethod-oriented approach is context dependent in nature and integrates both behavioral-functionalistic and generic approaches (Wesselink et al., 2015). This study will use multimethod-oriented approach to employ the competency concept. According to Ploum et al. (2018), multimethod-oriented approach refers to the competency as an individual ability to integrate personality with performance (Mulder, 2014).

1.1.2.2. Competence and specific work context

A change agent having knowledge (about economical, environmental, and social issues), attitude (values to support their actions), and Skills (ability to perform) elements, can perform sustainably (Svanström et al., 2008). So, far six authors have developed competencies required for sustainable performance.

Mostly, extent literature have employed a multimethod oriented or comprehensive approach to identifying competencies. All these six studies share three competencies i.e. system thinking, strategic management, and interpersonal competencies. Osagie et al. (2016) has emphasized over normative competence. But, Wesselink et al. (2015) did not give much attention to it. According to Wesselink et al. (2015), normative competence may exist already in the behavior of social responsible activists or lack in the structure of normative behaviors. Similarly, Rieckmann (2012) has introduced anticipatory (foresighted) thinking competence with equal focus in the empirical studies of Osagie et al. (2016) and Hesselbarth and Schaltegger (2014). But, on the other side, Wesselink et al. (2015) do not deem it as mandatory competency because of its direct association with the CSR context (Ploum et al., 2018). Wesselink et al. (2015) claim that anticipatory competency has substantial importance in the startup businesses and focus of their study were established matured businesses. Not only this, there is a lack of consensus among researchers at the significance of diversity and interdisciplinarity competence (Ploum et

al., 2018). Wesselink et al. (2015) acknowledges specific-work context competence but is missing in the work of Osagie et al. (2016). Another debate is at action competence. Extant literature emphasizes the significance of action competence (Blok et al., 2016) but there is a lack of empirical evidence in sustainable development (Ploum et al., 2018).

1.1.2.3. Sustainable entrepreneurs as change agents

Sustainable entrepreneurship widely comprises of the work relevant to the competencies in sustainable development (Ploum et al., 2018). Entrepreneurship is deemed to be more valuable than economic benefits in sustainable development. According to Patzelt and Shepherd (2011), sustainable entrepreneurs manage triple bottom line in the context of sustainability i.e. they try to tradeoff economic goals, ecological issues, and social equity through entrepreneurial behaviors. Sustainable entrepreneurs work as change agents (Hesselbarth & Schaltegger, 2014). This study takes into consideration sustainable entrepreneurs because of their part as transformation agent and in the stage of competence development. Lans et al. (2014) have filled the research gap between conceptual and quantitative studies for sustainable entrepreneurs in the context of sustainable development by facilitating seven key competencies as elaborated below.

Lans et al. (2014) did not merge strategic management and action competence based on their exploratory study but, Ploum et al. (2018) have claimed these two competencies as one competency based on their model fit indices. According to Ploum et al. (2018), the entrepreneurial context makes the relationship strong with action competence and strategic management, therefore strategic competence is incorporated in the action competence, known as strategic action competence.

System thinking competence: According to Wiek et al. (2011), it refers to recognize and evaluate the operations across social, economic and environmental domains, considering their limitations as well.

Embracing diversity and interdisciplinary competency: It arranges associations, identifies subjects, and distinguish the rightfulness of supplementary stakeholders in policymaking processes irrespective of their social, economic or ecological nature (Ellis & Weekes, 2008).

Foresighted Thinking Competence: According to Wiek et al. (2011), it anticipates the future image based on reviewing the enduring effect of short term and long-term choices with respect to the triple bottom line on the cosmopolitan scale.

Normative Competence: It ensures the reconciliation of sustainability values and principles across internal and external shareholders without breaking any single norm (Blok et al., 2016).

Interpersonal competence: This competence enables to collaborate and participate within sustainable activities (Wiek et al., 2011).

Strategic management and action competency: This requires active involvement in accountable actions to advance sustainability through collective designing of projects, implementation of interventions, transitions, and execution of the strategies through sustainable practices (Ploum et al., 2018).

Extant literature has exhibited distinction among orientation of the competencies. Hesselbarth and Schaltegger (2014) have made a wide-ranging difference grounded on social, personal, and methodological competencies. Four dimensions of sustainability competence- critical thinking, ethical, innovative, systematic knowledge dimensions, clearly depict the relationship between sustainable competencies (Ploum et al., 2018). Foresighted thinking and system thinking competencies both are helpful in dealing

with sustainability issue. Consideration of correlations and content of these competencies clearly put them into one cluster i.e. conceptual and systematic knowledge dimension. Strategic competence and normative competence are concerned about norm and values and focus on the 'learning to care'. A high correlation between these two competencies put them into an ethical dimension.

1.1.3. Sustainable performance

Different researchers have conceptualized differently sustainability in a business context (Montiel, 2008; Iqbal et al., 2020). Traditionally, corporate social responsibility (CSR) cope with social issues while on the other side environmental management take into account ecological issues (Kaynak & Montiel, 2009). Academic researchers later realized that corporate social responsibility considers additional dimensions such as environment and/or economic, where corporate sustainability has emerged (Kaynak & Montiel, 2009). Sustainability is a tri-dimensional construct based on social, economic, and environmental (Iqbal, 2018). According to Bansal (2005), environmental integrity ensures that human activities do not erode air, water resources, and land, (ii) economic prosperity enhances quality of life through the inductive capacity of individuals and organizations within society and (III) social equity ensures the equal opportunities and resources for all members of the society (Bansal, 2005). Furthermore, the integration of quality management with environmental management improves quality and ecological performance (Wolf, 2014) that results in enhanced environmental and economic sustainability. Sustainable performance consists of four dimensions i.e. employee satisfaction, environmental performance, quality and inventory performance, market and financial performance that are synchronized to triple bottom line (social, environmental, economic) (Foran et al., 2005).

Academic researchers have explored the issue of environmental sustainability on the large scale. According to Iqbal et al. (2018a), there is scant literature in the context of micro-level. Environmental sustainability highly relies on cognitive beliefs towards corporate social responsible practices (Fassin et al., 2015) from the perspective of micro-level. Extent literature have emphasized to enhance the understandings from the perspective of micro firms (Iqbal et al., 2018b). Being micro foundations, competencies with respect to resource-based view provide foundations for the organizational practices (Nyberg et al., 2014). RBV Literature highly concludes that resources and practices have direct relationship (Bowen, 2007). There are prevalence shreds of evidence about the substantial impact of heterogeneous organizational resources and individual characteristics on the environmental sustainability (Gond et al., 2017; Stea et al., 2017). As, there is high demand for competent individuals to handle contemporary business operations in the presence of advanced technology so right time to explore relevant competencies. According to Akhtar et al. (2018), the role of competencies has so far been ignored in relation to environmental sustainability. This study contributes to the literature by developing a conceptual framework where competencies are integrated with practices and environmental performance.

2. Problem Statement

Today, the world has recognized and acknowledged the disruptive climate changes, massive extinction of biodiversity, and prevalent nature of the population (Iqbal et al., 2018a). So, there is dire need to perform sustainably to cope with these challenges. Sustainable entrepreneurship motivates employers

and employees to align their business operations with environmental, financial, and social responsibility objectives in the context of sustainable development (Hooi et al., 2016; Iqbal, 2018). Sustainable entrepreneurial practices identify, recognize and evaluate the economic opportunities in parallel to sustainable development (Schaltegger & Wagner, 2011). Therefore, such practices are source of competitive advantage which enables firms to identify opportunities in terms of sustainable products, services and methods of manufacturing which means, sustainable entrepreneurial practices are proactive, and innovative (Adams et al., 2016). To recognize sustainable opportunities, sustainable entrepreneurs require the opportunity recognition skills, interpersonal skills, and learning from and adaptability to stakeholders (Dunphy, 2011). Sustainable entrepreneurial practices require employees to be innovative, risk-taker, and proactive along with awareness about sustainability challenges (Kuckertz & Wagner, 2010). Competencies work as a catalyst and create more reflexive, innovative and critical culture. Individual competencies comprise of these skills, knowledge, and attitude i.e. sustainable entrepreneurial competencies. Competencies enable to complete a task successfully and solve the real-world problem (Barth et al., 2007), where it consists of attitude, skills, and knowledge element (Mulder, 2014; Wesselink et al., 2015). Significant work has been conducted on the individual competencies in academic literature (Rieckmann, 2012; Wiek et al., 2011) but still are scant literature from a business perspective (Ploum et al., 2018). According to Ploum et al. (2018), six competencies i.e. are very useful in the context of sustainable entrepreneurial endeavors.

A large percentage of manufacturing firms have a clear understanding about the application competencies into their operations, but this concept is in its infancy in the arena of SMEs (Bhamra et al., 2011). There is sufficient literature on the environmental management but still scant of research about the influence of competencies that could facilitate sustainable entrepreneurial practices (Hofmann et al., 2012). According to Iqbal and Hassan (2018), many SMEs keep environmental issues as low priority because of limited budget, expensive to address, diverse organizational structure and not economically worth investigating. Yet, Esty (2008) claim that no firm irrespective of its size and geographical boundaries can afford to ignore the sustainable challenges in current era.

3. Research Questions

Based on the problem statement and objectives; this study comprises of below research questions;

Q1: Do sustainable entrepreneurial competencies significantly enhance the sustainable entrepreneurial practices at organizational level?

Q2: Do sustainable entrepreneurial practices significantly influences the sustainable performance at organizational level?

Q3: Do sustainable entrepreneurial practices mediate the relationship of sustainable entrepreneurial competencies with sustainable performance?

4. Purpose of the Study

Therefore, the present study aims to provide an integrated framework where sustainable performance could be enhanced through sustainable entrepreneurial competencies via sustainable entrepreneurial practices in the domain of SMEs.

5. Research Methods

5.1. Sustainable entrepreneurial competencies and practices

According to Collins and Clark (2003), knowledge, skills, and expertise are valuable sources of the firms. Knowledge is viewed as a valuable resource of the organizations (Grant, 1996). Knowledge, skills, and attitudes have vital importance to sustainable development (Ploum et al., 2018). Competency comprises of skills, attitude, and knowledge (Mulder, 2014). The knowledge enhances the competencies of employees to explore innovative opportunities (Wright et al., 2001). Sustainable entrepreneurs hold knowledge (about environmental, economic, and social issues), attitude (values to support their actions), and Skills (ability to perform) elements to perform sustainably in the context of sustainable development (Svanström et al., 2008). Sustainable entrepreneurial competent employees possess clear understanding across triple p i.e. Planet, people, and profit (Wiek et al., 2011). Therefore, sustainable entrepreneurs can identify the social or economic problem in a more systematic way. Competency enables employees to accomplish their job and solve problems relevant to challenges and opportunities (Barth et al., 2007). Sustainable entrepreneurs recognize the legitimacy of all involved stakeholders in sustainable challenges (Ellis & Weekes, 2008), which make it easy for them to take any decision. Similarly, in line to this, sustainable competent employees evaluate, analyze and craft future with respect to the triple bottom line on the large scale Wiek et al. (2011). Sustainable entrepreneurial practices require employees to be innovative, risk-taker, and proactive along with awareness about sustainability challenges (Kuckertz & Wagner, 2010). Organizational innovation is considered as a source of competitive advantage based on new products, services, and new management systems (Hurley & Hult, 1998). The organizational innovation highly relies on knowledge resources (Subramaniam & Youndt, 2005).

Competencies are being employed in diverse facets of human resource management ranging from individual selection to strategic planning. Employees contribute to the success of the organization through the deployment of their competencies (Rodriguez et al., 2002). Competencies substantially influence critical thinking and innovative performance of the employees (Laursen & Foss, 2003). Embracing diversity and interdisciplinary competence enables employees to spawn diverse ideas and more innovation within organizations (Chen & Huang, 2009). Employees with high competencies respond to changes swiftly (Scarborough, 2003). Sustainable entrepreneurial competent employees are very cautious about the deviation of any norms while doing a trade-off between economic, social, and environmental objectives (Blok et al., 2016). Collaborative and participation make it easy to integrate economic, social, and environmental objectives. According to Ploum et al. (2018), sustainable entrepreneurial employees strategically and actively seek to solve the social and ecological problems (Ploum et al., 2018). Sustainable entrepreneurship motivates employers and employees to align their business operations with environmental, financial, and social responsibility objectives in the context of sustainability (Hooi et al., 2016). Enhancing the

competencies of the employees helps the organizations to bring new products and services with better innovation (Chen & Huang, 2009). Sustainable entrepreneurial employees consider sustainability practices, an approach to deliver optimum in their workplace (Hesselbarth & Schaltegger, 2014).

Sustainable entrepreneurship widely comprises of the work relevant to the competencies in sustainable development (Ploum et al., 2018). According to Patzelt and Shepherd (2011), sustainable entrepreneurs accomplish triple bottom line i.e. they try to tradeoff economic goals, ecological issues, and social equity through entrepreneurial behaviors. Being change supporters, sustainable entrepreneurs embed triple-bottom line into business processes and deliver sustainability to society. From the above discussion, the following proposition is suggested;

Proposition 01: The higher sustainable entrepreneurial competencies, the better sustainable entrepreneurial practices will be

5.2. Sustainable entrepreneurial practices and sustainable performance

Organizations focus on sustainability through the development of the strategy with major emphasis on their responsibilities towards society and environment across regional and world level (Labuschagne et al., 2005). Organizations employ various diverse methods and approaches to enhance environmental sustainability (Olofsson et al., 2016). Sustainable entrepreneurs use market failures as opportunities to reduce hazard market practices to the society (Cohen & Winn, 2007; Dean & McMullen, 2007). From an innovation perspective, sustainable entrepreneurs employ bottom-up solutions to transform the socio-economic development (Hekkert & Negro, 2009). Sustainable entrepreneurs create economic, and societal values through environmentally institutional innovation (Schaltegger & Wagner, 2011). Furthermore, they not only go for technological innovation but also seek innovation in the market regulations, business environment, societal norms, and values. Sustainable entrepreneurs often modify their organizations and institute pro environmentally and deliver sustainable products and services that make them more competitive (Thompson et al., 2011). According to Pacheco et al. (2010), sustainable entrepreneurs practices are useful to reduce costs, spread new quality information, and even evaluate regulations to ensure the sustainably effective allocation of resources. Therefore, sustainable entrepreneurial practices enhance national well-being, health, and social well-being (Thompson et al., 2015). From the above discussion, the following proposition is suggested;

Proposition 2: The higher the sustainable entrepreneurial practice, the better the sustainable performance will be.

5.3. The mediating role of sustainable entrepreneurial practices

According to Mulder 2014, knowledge, skills, and attitude comprises of competency and play a pivotal part in the sustainable development (Ploum et al., 2018), so competency has substantial importance in this realm as well. Competency enables individuals to deliver their job effectively and efficiently (Barth et al., 2007). Based on the resource-based view (RBV) theory, competency makes the basics for the practices (Nyberg et al., 2014). Extent literature claims the significant impact of the heterogeneous organizational resources on sustainability (Gond et al., 2017; Stea et al., 2017). High competent employees

lead to better performance/operations on the individual and organizational level (Akhtar et al., 2018). Six sustainable entrepreneurial competencies (Ploum et al., 2018) corresponds to the Wals (2007)'s four dimensions of sustainability competence. So, with reference to the resource-based view and claims of Barth et al. (2007), sustainable entrepreneurial competencies are useful in the context of sustainable entrepreneurial practices, where organizations are required to tradeoff among goals of a triple bottom line. Sustainable entrepreneurial practices require employees and organizations to deliver sustainable products and/or services by exploiting market failures as opportunities through the synchronization of the tripe goals i.e. economic, ecological and social bead on sustainable innovations. On a similar note, sustainable performance is concerned about the social, economic, and environmental performance in parallel. So, better the sustainable entrepreneurial practices are, the better will be sp based on high competency. Therefore, the following proposition is suggested;

Proposition 3: The sustainable entrepreneurial practice mediates the relationship between sustainable entrepreneurial competencies and sustainable performance.

6. Findings

Based on the extensive literature, this study has proposed three hypotheses where sustainable entrepreneurial competencies work as independent variable, and sustainable performance as dependent variable. The sustainable entrepreneurial practices have been elucidated as mediator between these independent and dependent variables. This study presents its findings in the form of below research framework.

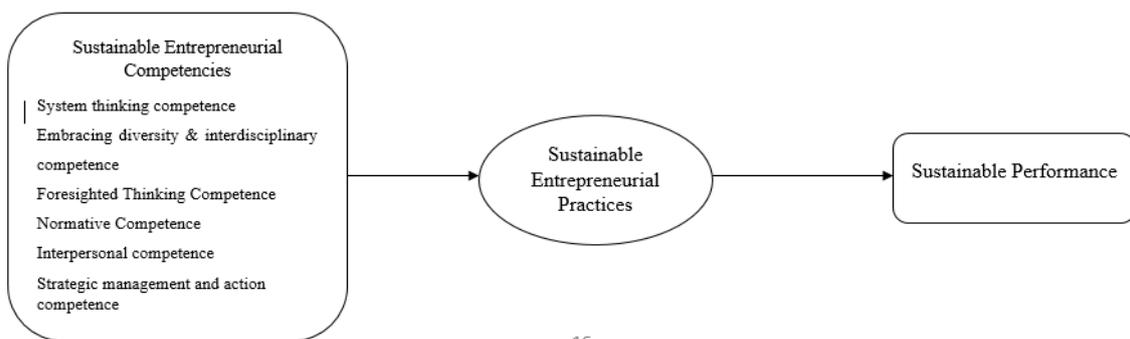


Figure 01. Proposed research framework

7. Conclusion

Sustainable development has substantial significance in the success of a business. There are sufficient pieces of evidence about the strong relationship between practices and performances of small and medium firms. However, there is lacking studies in the domain of sustainable entrepreneurial competencies, and sustainable entrepreneurial practices in service and manufacturing sector. The authors propose that sustainable entrepreneurial competencies (Ploum et al., 2018) are very useful to enhance sustainable performance via sustainable entrepreneurial practices in the era of sustainable development. The is

extensive employment of resource-based view (RBV) to conduct research relevant to performance enhancement and competitive advantage. Furthermore, empirical studies can be conducted to empirically test these propositions in the context of small and medium firms with reference to sustainable development goals. As suggested, further research could be undertaken to investigate the relationship between six dimensions of sustainable entrepreneurial competencies. The findings may also be useful to practitioners to sharpen their insights i.e. how to make sustainable entrepreneurial practices more effective.

Acknowledgments

We wish to thank Universiti Sains Malaysia for funding this project under Research University Grant Scheme no 1001/PMGT/8016010.

References

- Adams, R., Jeanrenaud, S., Bessant, J., Denyer, D., & Overy, P. (2016). Sustainability-oriented innovation: A systematic review. *International Journal of Management Reviews*, 18(2), 180-205.
- Akhtar, P., Khan, Z., Frynas, J. G., Tse, Y. K., & Rao-Nicholson, R. (2018). Essential micro-foundations for contemporary business operations: Top management tangible competencies, relationship-based business networks and environmental sustainability. *British Journal of Management*, 29(1), 43-62.
- Bansal, P. (2005). Evolving sustainably: A longitudinal study of corporate sustainable development. *Strategic Management Journal*, 26(3), 197-218.
- Barth, M., Godemann, J., Rieckmann, M., & Stoltenberg, U. (2007). Developing key competencies for sustainable development in higher education. *International Journal of Sustainability in Higher Education*, 8(4), 416-430.
- Belz, F. M., & Binder, J. K. (2017). Sustainable entrepreneurship: A convergent process model. *Business Strategy and the Environment*, 26(1), 1-17.
- Bhamra, R., Dani, S., & Bhamra, T. (2011). Competence understanding and use in SMEs: A UK manufacturing perspective. *International Journal of Production Research*, 49(10), 2729-2743.
- Binder, J. K., & Belz, F.-M. (2015). Sustainable entrepreneurship: What it is. *Handbook of Entrepreneurship and Sustainable Development Research*, 30-71.
- Blok, V., Gremmen, B., & Wesselink, R. (2016). Dealing with the wicked problem of sustainability: The role of individual virtuous competence. *Business and Professional Ethics Journal*. <https://doi.org/10.5840/bpej201621737>
- Bowen, F. (2007). Corporate social strategy: Competing views from two theories of the firm. *Journal of Business Ethics*, 75(1), 97-113.
- Boyatzis, R. E. (2008). Competencies in the 21st century. *Journal of Management Development*, 27(1), 5-12.
- Chen, C.-J., & Huang, J.-W. (2009). Strategic human resource practices and innovation performance—The mediating role of knowledge management capacity. *Journal of Business Research*, 62(1), 104-114.
- Choi, N., & Majumdar, S. (2014). Social entrepreneurship as an essentially contested concept: Opening a new avenue for systematic future research. *Journal of Business Venturing*, 29(3), 363-376.
- Cohen, B., & Winn, M. I. (2007). Market imperfections, opportunity and sustainable entrepreneurship. *Journal of Business Venturing*, 22(1), 29-49.
- Collins, C. J., & Clark, K. D. (2003). Strategic human resource practices, top management team social networks, and firm performance: The role of human resource practices in creating organizational competitive advantage. *Academy of Management Journal*, 46(6), 740-751.
- Corner, P. D., & Ho, M. (2010). How opportunities develop in social entrepreneurship. *Entrepreneurship Theory and Practice*, 34(4), 635-659.
- Dangelico, R. M., & Pujari, D. (2010). Mainstreaming green product innovation: Why and how companies integrate environmental sustainability. *Journal of Business Ethics*, 95(3), 471-486.

- Dean, T. J., & McMullen, J. S. (2007). Toward a theory of sustainable entrepreneurship: Reducing environmental degradation through entrepreneurial action. *Journal of Business Venturing*, 22(1), 50-76.
- Dunphy, D. (2011). Conceptualizing sustainability: The business opportunity. In *Business and sustainability: Concepts, strategies and changes* (pp. 3-24). Emerald Group Publishing Limited.
- Ellis, G., & Weekes, T. (2008). Making sustainability 'real': Using group-enquiry to promote education for sustainable development. *Environmental Education Research*, 14(4), 482-500.
- Esty, D. C. (2008). Rethinking global environmental governance to deal with climate change: The multiple logics of global collective action. *American Economic Review*, 98(2), 116-121.
- Fassin, Y., Werner, A., Van Rossem, A., Signori, S., Garriga, E., von Weltzien Hoivik, H., & Schlierer, H.-J. (2015). CSR and related terms in SME owner-managers' mental models in six European countries: National context matters. *Journal of Business Ethics*, 128(2), 433-456.
- Foran, B., Lenzen, M., Dey, C., & Bilek, M. (2005). Integrating sustainable chain management with triple bottom line accounting. *Ecological Economics*, 52(2), 143-157.
- Gond, J. P., El Akremi, A., Swaen, V., & Babu, N. (2017). The psychological microfoundations of corporate social responsibility: A person-centric systematic review. *Journal of Organizational Behavior*, 38(2), 225-246.
- Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal*, 17(S2), 109-122.
- Hekkert, M. P., & Negro, S. O. (2009). Functions of innovation systems as a framework to understand sustainable technological change: Empirical evidence for earlier claims. *Technological Forecasting and Social Change*, 76(4), 584-594.
- Hesselbarth, C., & Schaltegger, S. (2014). Educating change agents for sustainability—learnings from the first sustainability management master of business administration. *Journal of Cleaner Production*, 62, 24-36.
- Hofmann, W., Schmeichel, B. J., & Baddeley, A. D. (2012). Executive functions and self-regulation. *Trends in Cognitive Sciences*, 16(3), 174-180.
- Hooi, H. C., Ahmad, N. H., Amran, A., & Rahman, S. A. (2016). The functional role of entrepreneurial orientation and entrepreneurial bricolage in ensuring sustainable entrepreneurship. *Management Research Review*, 39(12), 1616-1638.
- Hurley, R. F., & Hult, G. T. M. (1998). Innovation, market orientation, and organizational learning: An integration and empirical examination. *The Journal of Marketing*, 62(3), 42-54.
- Iqbal, Q. (2018). The era of environmental sustainability: Ensuring that sustainability stands on human resource management. *Global Business Review*, 0972150918778967.
- Iqbal, Q., & Hassan, S. H. (2018). Green management matters: Green human resource management as blue ocean strategy. *Firms' Strategic Decisions: Theoretical and Empirical Findings*, 3, 214-237.
- Iqbal, Q., Ahmad, N. H., & Ahmad, B. (2018a). Enhancing sustainable performance through job characteristics via workplace spirituality: A study on SMEs. *Journal of Science and Technology Policy Management*. <https://doi.org/10.1108/JSTPM-02-2018-0022>
- Iqbal, Q., Ahmad, N. H., Nasim, A., & Khan, S. A. R. (2020). A moderated-mediation analysis of psychological empowerment: Sustainable leadership and sustainable performance. *Journal of Cleaner Production*, 262, 121429.
- Iqbal, Q., Hassan, S. H., Akhtar, S., & Khan, S. (2018b). Employee's green behavior for environmental sustainability: A case of banking sector in Pakistan. *World Journal of Science, Technology and Sustainable Development*, 15(2), 118-130.
- Jonsson, S., & Lindbergh, J. (2013). The development of social capital and financing of entrepreneurial firms: From financial bootstrapping to bank funding. *Entrepreneurship Theory and Practice*, 37(4), 661-686.
- Kaynak, H., & Montiel, I. (2009). The relationship between sustainable supply chain management and sustainable performance: An integrated framework. Paper presented at the Academy of Management Proceedings.
- Keskin, D., Diehl, J. C., & Molenaar, N. (2013). Innovation process of new ventures driven by sustainability. *Journal of Cleaner Production*, 45, 50-60.

- Kuckertz, A., & Wagner, M. (2010). The influence of sustainability orientation on entrepreneurial intentions—Investigating the role of business experience. *Journal of Business Venturing*, 25(5), 524-539.
- Labuschagne, C., Brent, A. C., & Claasen, S. J. (2005). Environmental and social impact considerations for sustainable project life cycle management in the process industry. *Corporate Social Responsibility and Environmental Management*, 12(1), 38-54.
- Lans, T., Blok, V., & Wesselink, R. (2014). Learning apart and together: Towards an integrated competence framework for sustainable entrepreneurship in higher education. *Journal of Cleaner Production*, 62, 37-47.
- Laursen, K., & Foss, N. J. (2003). New human resource management practices, complementarities and the impact on innovation performance. *Cambridge Journal of Economics*, 27(2), 243-263.
- Montiel, I. (2008). Corporate social responsibility and corporate sustainability: Separate pasts, common futures. *Organization & Environment*, 21(3), 245-269.
- Mulder, M. (2014). Conceptions of professional competence. In *International handbook of research in professional and practice-based learning* (pp. 107-137). Springer.
- Nyberg, A. J., Moliterno, T. P., Hale Jr, D., & Lepak, D. P. (2014). Resource-based perspectives on unit-level human capital: A review and integration. *Journal of Management*, 40(1), 316-346.
- Olofsson, Z., Hiselius, L., & Várhelyi, A. (2016). Development of a tool to assess urban transport sustainability: The case of Swedish cities. *International Journal of Sustainable Transportation*, 10(7), 645-656.
- Osagie, E., Wesselink, R., Blok, V., Lans, T., & Mulder, M. (2016). Individual competencies for corporate social responsibility: A literature and practice perspective. *Journal of Business Ethics*, 135(2), 233-252.
- Pacheco, D. F., Dean, T. J., & Payne, D. S. (2010). Escaping the green prison: Entrepreneurship and the creation of opportunities for sustainable development. *Journal of Business Venturing*, 25(5), 464-480.
- Parrish, B. D., & Foxon, T. J. (2006). Sustainability entrepreneurship and equitable transitions to a low-carbon economy. *Greener Management International*, 55, 47-62.
- Patzelt, H., & Shepherd, D. A. (2011). Recognizing opportunities for sustainable development. *Entrepreneurship Theory and Practice*, 35(4), 631-652.
- Perrini, F., Vurro, C., & Costanzo, L. A. (2010). A process-based view of social entrepreneurship: From opportunity identification to scaling-up social change in the case of San Patignano. *Entrepreneurship and Regional Development*, 22(6), 515-534.
- Ploum, L., Blok, V., Lans, T., & Omta, O. (2018). Toward a validated competence framework for sustainable entrepreneurship. *Organization & Environment*, 31(2), 113-132.
- Rieckmann, M. (2012). Future-oriented higher education: Which key competencies should be fostered through university teaching and learning? *Futures*, 44(2), 127-135.
- Robinson, J. (2006). Navigating social and institutional barriers to markets: How social entrepreneurs identify and evaluate opportunities. In *Social entrepreneurship* (pp. 95-120). Springer.
- Rodriguez, D., Patel, R., Bright, A., Gregory, D., & Gowing, M. K. (2002). Developing competency models to promote integrated human resource practices. *Human Resource Management*, 41(3), 309-324.
- Sandberg, J. (2000). Understanding human competence at work: An interpretative approach. *Academy of Management Journal*, 43(1), 9-25.
- Scarborough, H. (2003). Knowledge management, HRM and the innovation process. *International Journal of Manpower*, 24(5), 501-516.
- Schaltegger, S., & Wagner, M. (2011). Sustainable entrepreneurship and sustainability innovation: Categories and interactions. *Business Strategy and The Environment*, 20(4), 222-237.
- Shaw, E., & Carter, S. (2007). Social entrepreneurship: Theoretical antecedents and empirical analysis of entrepreneurial processes and outcomes. *Journal of Small Business and Enterprise Development*, 14(3), 418-434.
- Stea, D., Pedersen, T., & Foss, N. J. (2017). The relational antecedents of interpersonal helping: 'Quantity', 'Quality' or Both? *British Journal of Management*, 28(2), 197-212.

- Subramaniam, M., & Youndt, M. A. (2005). The influence of intellectual capital on the types of innovative capabilities. *Academy of Management Journal*, 48(3), 450-463.
- Svanström, M., Lozano-García, F. J., & Rowe, D. (2008). Learning outcomes for sustainable development in higher education. *International Journal of Sustainability in Higher Education*, 9(3), 339-351.
- Thompson, N., Herrmann, A., & Hekkert, M. (2015). How sustainable entrepreneurs engage in institutional change: Insights from biomass torrefaction in the Netherlands. *Journal of Cleaner Production*, 106, 608-618.
- Thompson, N., Kiefer, K., & York, J. G. (2011). Distinctions not dichotomies: Exploring social, sustainable, and environmental entrepreneurship. In *Social and Sustainable Entrepreneurship* (pp. 201-229). Emerald Group Publishing Limited.
- Wals, A. E. (2007). *Social learning towards a sustainable world: Principles, perspectives, and praxis*: Wageningen Academic Pub.
- Wesselink, R., Blok, V., van Leur, S., Lans, T., & Dentoni, D. (2015). Individual competencies for managers engaged in corporate sustainable management practices. *Journal of Cleaner Production*, 106, 497-506.
- Wiek, A., Withycombe, L., & Redman, C. L. (2011). Key competencies in sustainability: A reference framework for academic program development. *Sustainability Science*, 6(2), 203-218.
- Wolf, J. (2014). The relationship between sustainable supply chain management, stakeholder pressure and corporate sustainability performance. *Journal of Business Ethics*, 119(3), 317-328.
- World Commission on Environment and Development. (1987). *Our common future*. Oxford.
- Wright, P. M., Dunford, B. B., & Snell, S. A. (2001). Human resources and the resource based view of the firm. *Journal of Management*, 27(6), 701-721.
- Zahra, S. A., Gedajlovic, E., Neubaum, D. O., & Shulman, J. M. (2009). A typology of social entrepreneurs: Motives, search processes and ethical challenges. *Journal of Business Venturing*, 24(5), 519-532.