

Doctoral Thesis

**Consequences of incorporating sustainability business models into operations of small and medium-sized firms in Ghana**

**Význam začlenění obchodních modelů udržitelnosti do řízení malých a středních firem v Ghaně**

Author: **Adwoa Yeboaa Owusu Yeboah**

Degree Programme: P6208 Economics and Management

Degree course: 6208V038 Management and Economics

Supervisor: doc. Ing. Petr Novák, Ph.D.

Zlín, December 2023

© Adwoa Yeboaa Owusu Yeboah

Published by **Tomas Bata University in Zlín** in the Edition **Doctoral Thesis Summary**.

The publication was issued in the year 2023

*Keywords: Business Models for sustainability, SMEs' sustainability performance, Market readiness, Business case drivers, Value creation, Value proposition*

*Klíčová slova: Obchodní modely udržitelnosti, výkonnost malých a středních podniků v oblasti udržitelnosti, připravenost trhu, hnací síly obchodního případu, vytváření hodnoty, návrh hodnoty*

Full text of the doctoral thesis is available in the Library of TBU in Zlín.

## **DEDICATION**

I dedicate this work to my family, friends, and loved ones.

## **ACKNOWLEDGEMENTS**

I want to express my appreciation to the individuals, groups, and organizations that have contributed to my attaining this feat; I am eternally grateful to all those mentioned here.

I want to thank the University of Cape Coast and especially the School of Business for this opportunity. The University awarded me study leave, a scholarship, and other perks to support me during the program; I genuinely appreciate these. I want to especially thank Prof. John Gatchie-Gatsi for his support and interest during my Ph.D. program. Thank you, sir; I am grateful to you.

I also appreciate Tomas Bata University in Zlín and the Faculty of Management and Economics for the Ph.D. training. I am grateful for the financial package in the form of stipends, research scholarships, project scholarships, conference funding, and all other financial and resource commitments made towards ensuring that my Ph.D. training was complete.

To my supervisor, doc. Ing. Petr Novák, Ph.D., thank you for agreeing to supervise me. To Martina Drábková, you made life so easy for me, attending to all my school-related issues. You are the best!!! I am also grateful to Pavla Bartošová for her assistance before and during the Ph.D. program. To all members of staff at FaME who worked hard directly or behind the scenes to ensure that I completed this Ph.D., you are in my thoughts.

Finally, to all my friends and colleagues at TBU, I thank you so much for your encouragement and good words during difficult times. Your hugs and smiles will forever be with me. I am especially indebted to five special people: my ever-loving husband Solomon Owusu Yeboah (my Papa Solo); I am super grateful for all your support and loving care. I love you so much. To Christina Appiah-Nimo, doc. Ing. Michael Adu-Kwarteng (Ph.D.), and Iveta Holoubková (Maminka); I cannot tell my TBU story without you. To Kwabena Nsiah Takyi (Kobby), you appeared at the perfect time to help me complete this thesis. I thank you all so much; may God richly bless you.

## **ABSTRACT**

Concerns about the sustainability of the earth and its resources have grown over the last three decades. Individuals and organizations continue to warn about the risk to life if drastic changes are not instituted. For this reason, Small and Medium Enterprises are encouraged to incorporate sustainability into their business practices, hence, sustainable entrepreneurship. For many, this expectation is reasonable because evidence suggests that the collective effect of SMEs' activities has a detrimental impact on the earth, exactly like large firms.

There are some strategies for implementing sustainable entrepreneurship. However, many researchers suggest business models for sustainability (BMfS) as the most effective way business organizations can achieve or enhance their sustainability performance. The goal of this concept is for firms to include sustainability considerations and actions in all their processes fully. Here, the firm embraces sustainability as part of its long-term goals by including it from the product development stage to the point when it gets to the final user. This approach differs from the current situation, where most firms try to achieve sustainability by investing in selected activities or projects.

With the aid of quantitative methods, this thesis studied the possible consequences of implementing BMfS in Ghana among SMEs. To main aim was to ascertain the perceptions of managers and owner-managers about the direct and indirect effects of implementing BMfS. The thesis has four research questions (and objectives) and eight hypotheses. Data was carefully collected using a questionnaire and then thoroughly analysed with statistical techniques into descriptives, reliability and validity tests, hypotheses testing (direct and indirect relationships), and the strengths and effects of the connections. All these were achieved using two software, mainly Microsoft Excel and SmartPls 3.

It was found that there the respondents perceived that was a strong direct relationship between the independent variables and the dependent variable. Similarly, it was perceived that market readiness (the moderator variable) impacted the direct connection, albeit weak and insignificant. However, the mediator variable did not have any effect on the relationship. From the findings, a thorough discussion involving the extant literature ensued. This resulted in connecting and positioning the work with related works. Additionally, some theoretical and practical implications were also realised from the discussions. Finally, suggestions for future studies relating to the variables were also provided.

## **ABSTRAKT**

V posledních třech desetiletích vzrostly obavy o udržitelnost Země a jejích zdrojů. Nedojde-li k zavedení drastických změn, organizace i jednotlivci nadále varují před

rizikem pro život. Z tohoto důvodu jsou také malé a střední podniky vybízeny, aby do svých obchodních praktik začlenily udržitelnost, proto udržitelné podnikání. Pro mnohé je toto očekávání pochopitelné, protože stávající důkazy naznačují, že kolektivní účinek činností malých a středních podniků má na Zemi podobné škodlivé účinky jako velké podniky.

Existuje spousta strategií pro zavádění udržitelného podnikání. Nicméně, řada výzkumných pracovníků navrhuje obchodní modely udržitelnosti (OMU) jako nejúčinnější prostředek, pomocí kterého mohou obchodní organizace dosáhnout udržitelnosti nebo zlepšit svou výkonnost v této oblasti.

Záměrem tohoto konceptu je, aby firmy do všech svých procesů plně zahrnovaly hlediska a příslušná opatření udržitelnosti. Tím, že je firma zahrne od fáze vývoje produktu až do okamžiku, kdy se tento produkt dostane ke konečnému uživateli, firma přijímá udržitelnost jako součást svých dlouhodobých cílů. Tento přístup je zcela odlišný od současné situace, kdy se většina firem snaží dosáhnout udržitelnosti investováním do vybraných aktivit nebo projektů.

Tato disertační práce zkoumala pomocí kvantitativních metod možné důsledky zavedení OMU v malých a středních podnicích v Ghaně. Hlavním cílem bylo zjistit, jak manažeři a vlastníci firem vnímají přímé a nepřímé dopady implementace OMU. Práce má čtyři výzkumné otázky (a cíle) a osm hypotéz. Pomocí dotazníku byla data pečlivě shromážděna a poté důkladně analyzována statistickými technikami na deskriptivní testy, testy spolehlivosti a validity, testování hypotéz (přímé a nepřímé vztahy) a síly a účinky vztahů. Vše bylo zpracováno pomocí dvou softwarů, Microsoft Excel a SmartPls 3.

Bylo zjištěno, že respondenti vnímali silný přímý vztah mezi nezávisle proměnnými a závisle proměnnou. Podobně bylo vnímáno, že připravenost trhu (moderátorská proměnná) měla vliv na přímý vztah, i když slabý a nevýznamný. Mediátorská proměnná však neměla na vztah žádný vliv. Z těchto zjištění se rozvinula rozsáhlá diskuse zahrnující i současnou literaturu. Výsledkem bylo propojení a začlenění této práce mezi související díla. Z diskuzí navíc vyplynuly i některé teoretické a praktické důsledky. Závěrem byly poskytnuty návrhy pro budoucí studie týkající se proměnných.

# CONTENTS OF THE THESIS

DEDICATION.....	3
ACKNOWLEDGEMENTS.....	4
ABSTRACT .....	5
ABSTRAKT .....	5
CONTENTS OF THE THESIS .....	7
LIST OF TABLES .....	9
LIST OF FIGURES .....	10
LIST OF ABBREVIATIONS.....	11
1 INTRODUCTION.....	12
1.1 Sections of the thesis.....	14
2 CURRENT STATE OF THE ISSUES DEALT WITH .....	15
2.1 Overview of sustainable entrepreneurship: arguments for and against .....	15
2.1.1 Sustainable entrepreneurship .....	15
2.1.2 Sustainable entrepreneurship in the Ghanaian context.....	21
2.2 Problem statement and study objectives .....	22
2.2.1 Research gap.....	22
2.2.2 Key research questions .....	24
2.2.3 Research objectives .....	25
2.2.4 Delimitation of the study.....	25
3 THEORETICAL AND CONCEPTUAL BASES FOR THE WORK .....	25
3.1 Theoretical framework .....	25
3.1.1 Sustainability-oriented theory.....	26
3.1.2 Natural resource-based Theory .....	28
3.1.3 Stakeholder theory .....	29
3.1.4 Theory of planned behavior .....	31
3.2 Conceptual framework and hypotheses formulation.....	32
3.2.1 Development of the conceptual framework .....	32
3.3 Conceptual arguments and hypotheses development .....	33
3.3.1 BMfS and SME's sustainability performance .....	33
3.3.2 Market (consumer) readiness and SME sustainability performance .....	37
3.3.3 Business case drivers and sustainability.....	38
4 METHODOLOGY.....	48

4.1 Research Design.....	48
4.2 Study area, population, and sample for the study.....	51
4.5 Research instruments.....	53
4.5.1 Questionnaire.....	53
4.5.2 Pre-test .....	56
4.6 Data collection and preparation.....	61
4.7 Common method variance.....	63
<b>5 EMPIRICAL RESULTS .....</b>	<b>64</b>
5.1 Data analysis.....	64
5.2 Test for reliability.....	65
5.3 Test for discriminant validity.....	67
5.4 Hypotheses testing using partial least square-structural equation modelling (PLS-SEM) .....	71
5.5 Presentation of Analysis of perceived challenges associated with BMfS.....	80
<b>6 DISCUSSION OF RESEARCH FINDINGS .....</b>	<b>85</b>
<b>7 CONTRIBUTIONS OF THE STUDY .....</b>	<b>92</b>
7.1 Theoretical implications .....	92
7.2 Practical implications.....	94
7.3 Policy implications.....	95
<b>8 CONCLUSIONS, LIMITATIONS, AND FUTURE RESEARCH DIRECTION.....</b>	<b>96</b>
8.1 Conclusion.....	96
8.2 Limitations of the study .....	99
8.3 Suggestion for future work.....	100
<b>BIBLIOGRAPHY .....</b>	<b>101</b>
<b>APPENDICES .....</b>	<b>117</b>



## LIST OF TABLES

Table 1 Works that have explored sustainability business models.....	39
Table 2 Measurement instrument for study variables .....	52
Table 3 Construct reliability (Preliminary Testing) .....	55
Table 4 Test of discriminant validity- Fornell-Larcker Criterion (Preliminary Testing) .....	58
Table 5 Demographics of respondents .....	60
Table 6 Construct reliability for measurement Model (Actual).....	63
Table 7 Test for discriminant validity- Fornell-Larcker Criterion (Actual) .....	67
Table 8 Test for discriminant validity-Heteriotriat-Monotrait (HTMT) Ratio .....	68
Table 9 Factor loadings and multicollinearity (Variance Inflation Factor) .....	70
Table 10 Path Analyses of the structural model (Direct Relationship).....	73
Table 11 Path analyses of the structural model (Indirect relationship).....	74
Table 12 Coefficient of determination .....	76
Table 13 Output of the effect sizes.....	78
Table 14 Responses to challenge 1.....	79
Table 15 Responses to challenge 2.....	80
Table 16 Responses to challenge 3.....	82
Table 17 Responses to challenge 4.....	83
Table 18 Summary of hypotheses testing .....	85
Table 19 Summary of research methodology.....	121
Table 20 Base data for thesis.....	122
Table 21 Summary of descriptives statistics.....	123

## **LIST OF FIGURES**

Figure 1: Destruction of water body.....	16
Figure 2: Impact of small scale minning on forest cover.....	17
Figure 3: Destruction of forest by small scale mining.....	18
Figure 4: The conceptual framework for the study.....	30
Figure 5: General Framework of the Study.....	47
Figure 6: Estimated Research Model.....	75
Figure 7: Responses to challenge 1 .....	80
Figure 8: Responses to challenge 2.....	81
Figure 9: Responses to challenge 3.....	82
Figure 10: Responses to challenge 4.....	83

## **LIST OF ABBREVIATIONS**

BCD	Business Case Drivers
BMfS	Business Models for Sustainability
CEO	Chief Executive Officer
CP	Corporate Philanthropy
CSR	Corporate Social Responsibility
ENV	Environment
IC	Innovative Capabilities
MR	Market Readiness
NBSSI	National Board for Small-Scale Industries
NRBT	Natural-Resource-Based Theory
PLS	Partial Least Square
PLS-SEM	Partial Least Square-Structural Equation Modeling
RBT	Resource-Based Theory
RBV	Reputation and Brand Value
SBM	Sustainable Business Model
SDGs	Sustainable Development Goals
SEM	Structural Equation Modelling
SME	Small and Medium Sized Enterprises
SOC	Social
SP	Sustainability Performance
TPB	Theory of Planned Behaviour
UN	United Nations
VC	Value Creation
VP	Value proposition

# 1 INTRODUCTION

Traditionally, entrepreneurship is seen as an opportunity-driven activity (Ali, Kelley & Levie, 2019), aiming to exploit and explore opportunities in the environment to satisfy human wants and needs (York & Venkataraman 2010). Because of this, it thrives on sustainable competitive advantage (Weerawardena & O’Cass, 2004). Also, it is a means of making a living (Fairlie & Fossen, 2018) for individuals who are not interested in working for others, unable to find jobs, or merely motivated to practice entrepreneurship. These show that wealth creation is the most critical goal for entrepreneurship.

However, researchers in entrepreneurship and sustainability are suggesting a modern view. According to them, the two should be merged to form sustainable entrepreneurship. They claim that it is how businesses can support all life forms on the planet (De Clercq & Voronov, 2011; Hall, Daneke, & Lenox, 2010). This position could largely be attributed to the concerns in the Brundtland report, which suggests that the extent of environmental degradation is at a pace that the natural systems cannot sustain. According to the report, the earth and its inhabitants face critical issues such as poverty, inequality, uneven development, population growth, and excessive pressures on the earth’s natural resources, i.e., lands, waters, forests, and other natural resources. Hence, these must be checked (Brundtland, 1987).

Additionally, there are general concerns from individuals, private organizations, and society about the growing rate of degradation (Global Alliance for Rights of Nature, 2021). Several developed and developing countries are alarmed by how businesses exploit the earth's physical resources for the sole purpose of profits. In response, these countries continue to sign treaties and compacts to protect the planet (Paris Agreement, 2015; SDGS, 2015).

The argument for combining sustainability with entrepreneurship is because of concerns that entrepreneurship contributes enormously to the planet's degradation (Johnsen et al., 2017; Tura et al., 2019). Even though these firms are small, their activities can collectively result in problems such as abuse of natural resources, over-production, environmental pollution, and social unrest through their dealings with the communities in which they operate. Because of their activities and their effect on the earth, they must contribute to solving the challenges associated with sustainability. Besides, an endangered world will negatively affect their ability to survive and remain sustainable.

Furthermore, some research works suggest that SMEs may have the solution to the many environmental problems they create. They further argue that they may have the resources to solve such issues since their activities result in substantial financial benefits (Kaur & Agrawal, 2011; Torres, Bijmolt, Tribo & Verhoef, 2012). For Konys (2019), firms must be responsible for making the earth sustainable. This responsibility is irrespective of whether they hurt the planet or not. This position may be due to the

argument that firms' sustainability performance provides legitimacy and market success. Since there is no argument against urgently tackling sustainability problems (Cohen & Winn 2007; Walker et al. 2014), all must show concern and actively support protecting the earth. All these assertions provide proof that sustainable entrepreneurship is ripe.

Current literature on sustainable entrepreneurship points to Business Models for Sustainability (BMfS) as the route to enhancing sustainability performance (Ludeke-Freund 2019; Ludeke-Freund & Dembek 2016; Schaltegger, Hansen, & Ludeke-Freund 2016). The concept of sustainable business models was pioneered by Stubbs and Cocklin (2008). According to them: "*organizations will only be sustainable if the dominant neoclassical model of the firm is transformed, rather than supplemented, by social and environmental priorities*" (Stubbs & Cocklin, 2008, p.2). This position undermines the idea that sustainability performance is possible through contributions by firms to social and environmental causes, which has primarily been the conventional approach to sustainability.

The argument for BMfS is not unique to Stubbs and Cocklin (2008). Several researchers also share similar sentiments. For example, Schaltegger et al. 2011 insist that sustainable business models should be the basis for the business case for sustainability. Abdelkafi and Tauscher (2015) are emphatic that sustainability can only be attained if firms change their "entire business logic." Schaltegger et al. (2016) refer to the idea of having sustainable business models (Stubbs and Cocklin 2008) as the "ideal type" when it comes to achieving sustainability performance. Bocken et al. (2014) comment, "a holistic approach is required to tackle the challenges of a sustainable future." These positions may probably be due to the shortcomings in existing strategies like CSR and corporate philanthropy for achieving sustainability performance.

Researchers argue that business models provide the key to business success (Bocken et al., 2014; Zott et al., 2011), they extend this argument to mean that sustainability-oriented business models are more successful at delivering sustainability performance to firms. Bocken et al. (2013) insist that sustainability-oriented models create value for various stakeholders relating to economic, social, and environmental issues. Logically, a business model specifically designed to achieve sustainability is more likely to enhance firms' sustainability performance.

Despite these exciting ideas about sustainable business models, some concerns remain about their applicability and usefulness. Khmara and Kronenberg (2018) suggest that BMfS is vague. That work bases its arguments on Wells (2016) that business models for sustainability are elusive and imprecise, so it expresses some skepticism about it. Additionally, the fact that the "fathers" of BMfS set out to discuss whether it is an emerging trend or a fallacy (Ludeke-Freund and Dembek, 2017) gives some evidence of their discomfort about the progress, application, and justification of the ideas that

make up BMFS. These concerns make it imperative that the concept is carefully discussed.

Sustainability performance has become very relevant in social and corporate settings, researchers must determine the applicable measures and more effective and efficient ways of achieving it. By this, researchers must contribute to existing theories on the subject. There is also the need to explore the exact conditions and mechanisms under which BMfS contribute to the firm sustainability performance, which is a real possibility. Other ancillary factors must also be examined to determine if they contribute to the discussion. In this instance, it will require the introduction of mediators and moderators into the direct relationship between the BMfS and firms' sustainability performance (Namazi & Namazi 2016).

## **1.1 Sections of the thesis**

This work is divided into seven main segments. Each of these segments discusses the main components of the thesis. These segments are summarized below:

*Section 1:* It presents the introduction to the thesis. This essentially justifies embarking on a study of this nature. It provides readers with a clear background of the study and its purpose.

*Section 2:* This aspect of the work establishes a firm foundation for the study through existing literature. It further discusses the research problem, objectives and research question, and the delimitations of the study.

*Section 3:* The next segment presents the relevant literature and theories with arguments supporting the thesis. The thesis's conceptual framework/model and proposed hypotheses are also presented. These show the relationship among the variables of the study i.e., the direct and indirect relationships discovered from the existing literature review.

*Section 4:* The methodology is thoroughly discussed in this segment. Here, the research methods, statistical tools employed, and justification for the choices made are presented. The main issues in this part of the work include the research design, sampling methods, data collection tools, data collection strategy, and analytical techniques.

*Section 5:* The findings of the empirical inquiry are presented here in the form of tables and diagrams. These show the raw output from the statistical analyses with brief notes presenting the findings as depicted in the tables and graphs.

*Section 6:* This segment provides an in-depth discussion of the findings. It is guided by the research objectives and the hypotheses formulated at the study's outset. A

significant aspect of the section is including existing literature in the discussion to determine the similarities and differences the thesis shares with these previous works.

*Section 7:* The contributions of the thesis concerning theory and practice are described here. This part provided the value of the theory and the potential benefits of the findings of the work. It essentially presents why it was necessary to undertake this empirical study.

*Section 8:* This ends the thesis work by providing a conclusion, limitations, and future research directions.

Additionally, the thesis presents a list of all the references cited in the work and other necessary information which forms part of the appendices of the thesis.

## **2 CURRENT STATE OF THE ISSUES DEALT WITH**

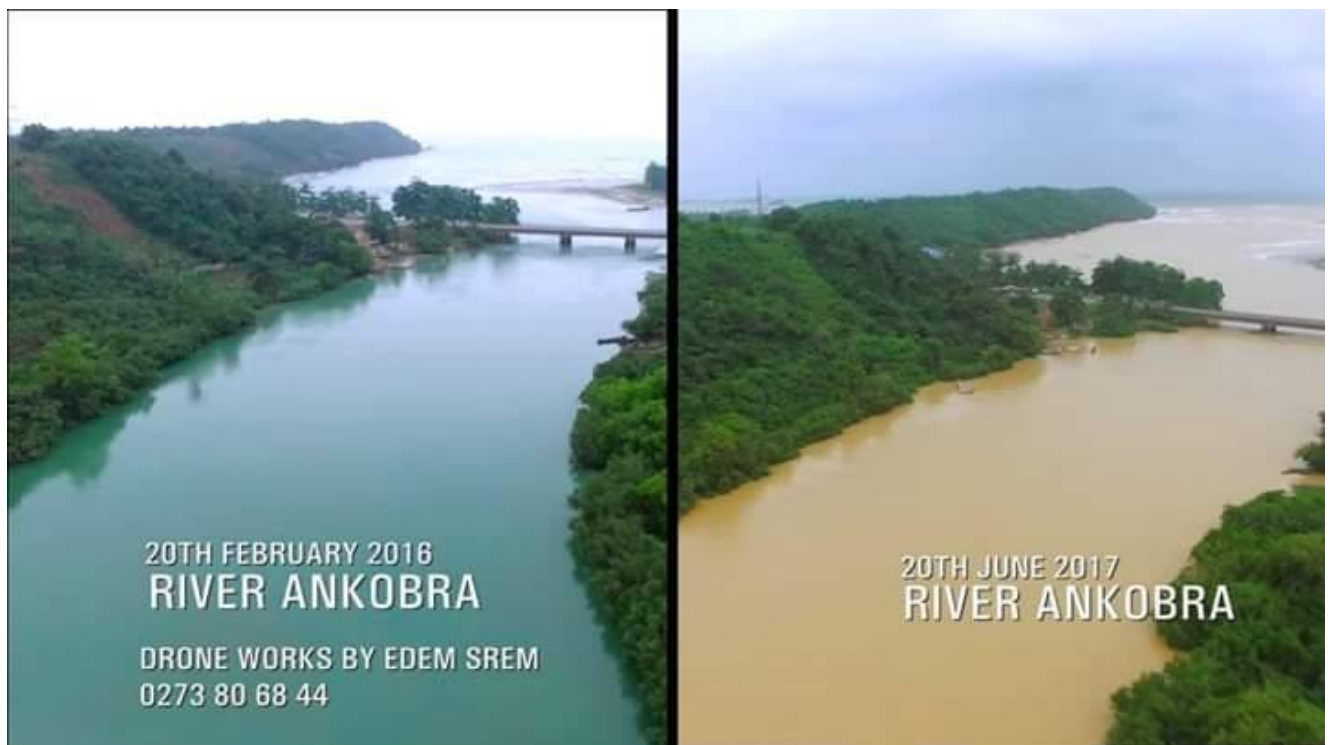
### **2.1 Overview of sustainable entrepreneurship: arguments for and against**

#### **2.1.1 Sustainable entrepreneurship**

The origin of sustainable entrepreneurship is closely connected to the conversation on sustainable development. According to the sustainable development commission, sustainable development was on the United Nations Conference on Environment and Development agenda. It was viewed as the solution to the issues raised in the 1987 Brundtland Report on environmental degradation. According to that Report, sustainable development is: "...development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs." This highlights, at the least, that without sustainability, future generations may not be able to provide for their needs, with the worst-case scenario being the extinction of life –if the planet cannot support it. Arguments for sustainability paint a gloomy picture for future generations; therefore, there is a need to implement sustainability strategies.

Because of concerns for sustainable development, United Nations Member States 2015 developed guidelines for ensuring worldwide peace and prosperity. This gave birth to the sustainable development goals (SDGs). These are 17 goals aimed at tackling sustainability issues among the world's developing and developed countries. These goals are no poverty, zero hunger, good health and well-being, quality of education, gender, clean water and sanitation, affordable and clean energy, decent work and economic growth, industry, innovation and infrastructure, reduced inequalities, sustainable cities and communities, and responsible consumption and production. According to the United Nations, there will be sustainable development when these goals are collectively achieved.

Business organizations also have a role to play in sustainable development. It is because their activities place them at the core of sustainability issues. Their activities involve exploiting and exploring inputs from the natural environment. At the same time, their output into the environment has negative consequences. These result in environmental degradation, pollution, climate change, waste accumulation, and loss of non-renewable natural resources. Because of this, Hall, Daneke, & Lenox (2020) argue that renewable resources should be used, with less emphasis on non-renewable resources when possible. Besides the environmental problems that business organizations cause, they also negatively impact society. Communities that are endowed with natural resources usually end up being the poorest. Several examples are found in most developing countries, including the West African Nation of Ghana. All the mining communities in the country contend with social vices, poverty, lack of development, and social instability. These adverse conditions are all directly attributable to the mining activities in those communities. Because of these environmental and social problems caused by businesses, they must contribute to ensuring sustainability. The destruction has affected river bodies, the natural landscape, and the country's forest cover. Evidence of such destruction is shown in Figures 1 to 3; they depict how small-scale miners in Ghana have destroyed the natural environment.



*Figure 1: Destruction of water body*



The left side of Figure 1 shows the natural state of the river Ankobra located in the western region of Ghana. This river runs about 190 km and finally meets the Atlantic Ocean on Ghana's coastline. The surrounding communities used this river for most of their household needs. It was also a source of their livelihood and contributed to their recreation. This natural beauty is now tarnished with dirty water due to heavy pollution from chemicals such as arsenic, mercury, and cadmium, all attributable to illegal mining in the country (Aboka, Cobbina, & Doke, 2018). The water has no life in it and appears dead. The river's current state is depicted on the right side of the picture.



*Figure 2: Impact of small-scale mining on forest cover*



*Figure 3: Destruction of forest by small scale mining*

Figures 2 and 3 also show the extent of land depletion and forest cover depletion. Several acres of land have been destroyed in the name of SME mining activity. The result is pollution in all its forms. There is noise pollution due to the heavy equipment used at

the mining sites. The destruction and contamination of the land have rendered the land less fertile, causing a reduction in food production. The situation has implications for the animal species that live there. The obvious conclusion is that they have either relocated or have been killed. Beyond the environment, the social life of the communities has been negatively impacted, with reports about children abandoning school to engage in such a business venture. Along with an increase in social vices and health risks, such as increased numbers of HIV/AIDS patients because of sexual promiscuity in those communities (Aboka, Cobbina, & Doke, 2018; Azumah, Baah, & Nachinaab, 2021). These figures prove why SMEs must contribute to the sustainability agenda since their activities negatively affect the planet's health.

Researchers have also proposed additional reasons why businesses should be involved in sustainability. These are 1. Businesses benefit fully from the environment and society and even owe their existence to them. They provide all the inputs that businesses require for their operations. Firms extract their raw materials from the natural environment and transform them into finished products. This ensures that they have a purpose for their existence. Additionally, society also supports its production activities through employees. Employees form the human factor that operates the business; the raw materials become useless without them. They are a necessary part of the firms' activities. This shows how the environment and society together support the firm. 2. They contribute vastly to the pollution and degradation of the planet. Businesses extracting natural raw materials, including forest cover and water bodies, usually destroy the natural environment. Additionally, they contaminate the environment with their waste, affecting air, water, and general quality of life. 3. It is also argued that businesses have the financial and technical resources required to solve the social and environmental problems that they contribute to creating. They should take the lead since they are more organized and better positioned to solve such problems. 4. Finally, some scholars also suggest that businesses like the citizenry are responsible for solving these issues irrespective of whether they caused them. The argument is that taxes alone are not enough for buses. As active members of society that can sometimes be viewed as artificial persons, they are responsible for working towards sustainability (Heikkurinen & Bonnedahl, 2013; Strand, Freeman, & Hockerts, 2015).

Existing literature suggests that most entrepreneurial firms agree that they have a role in ensuring sustainability (Achabou & Dekhili, 2006; Simoes-Coelho & Figueira, 2021). The concern however, is, the most effective means of contributing to sustainability. For instance, business organizations and researchers have explored corporate social responsibility (CSR). Businesses design programs to resolve social, economic, and environmental problems here. From existing literature, it can be inferred that corporate social responsibility is rather reactive and is implemented to solve problems that firms have already created. Because of this, some authors have harshly criticized it, arguing

that it is used to detract attention from the harmful effects of firms' activities (Robert, 2003; Banerjee, 2008; Hopkins, 2005). Indeed, empirical studies show that it has enormous benefits for firms and societies (Alhouthi & D'Souza, 2016; Green & Peloza, 2011; Hartmann & Ibanez, 2012). However, CSR cannot undo all the problems that those firms have already created. Based on such shortcomings, Hopkins (2005) calls into question how these strategies can effectively offer sustainability solutions for firms, society, and the environment. Besides, corporate social responsibility is usually guided by firms' interests and is typically implemented to achieve instrumental value.

Another popular strategy in corporate responsibility is corporate philanthropy (CP) or corporate giving, where firms, out of goodwill, donate to societies, charities, groups, and some special courses (programs). Godfrey (2005) is defined in Gautire and Pache (2015, p4). as: "an unconditional transfer of cash or other assets to an entity or a settlement or cancellation of its liabilities in a voluntary nonreciprocal transfer by another entity acting other than as an owner." The authors describe it as a means for achieving the common good, community investment, and a marketing tool. These attributes reveal that CP contributes to social and economic goals. Of course, firms can and do extend these goals to include care for the environment, all in their attempts to ensure sustainability performance.

Despite the attempts by firms to be responsible, current research suggests that there is room for improvement. It is for this reason that since 2008, research on sustainable business models has emerged. Researchers argue that a sustainable business model is critical to achieving sustainability. To proponents of this agenda, it offers a holistic and more effective means for firms to contribute to sustainability. This has resulted in several studies in the area so that it can be conceptualized appropriately and tested empirically to enhance practicability (Ludeke-Freund 2019; Ludeke-Freund & Dembek 2016; Schaltegger, Hansen, & Ludeke-Freund 2016; Stubbs & Cocklin, 2008).

There is, however, another side of the argument on sustainable entrepreneurship. Some researchers have raised concerns about its impact on SMEs. Two decades ago, Lawrence et al. (2006) reported that even though firms in New Zealand were concerned about social and environmental issues and took some steps to support these, SMEs mainly did not focus on sustainability performance. Their research showed that although firms were interested in social and environmental issues, they were not entirely focused on them. So, they did not have specific sustainability goals in those two areas.

Similarly, Cardoni et al. (2020) suggested that focusing on achieving "***total sustainability***" was unnecessary for SMEs. Bianchi et al. (2015) shared similar sentiments that SMEs needed to tackle liquidity issues since their survival largely depended on it. Studies such as Cantele and Zardina (2018) and Eikelenboom and de Jong (2019) empirically expose the irrelevance of social and environmental sustainability

performance while highlighting the need for SMEs to advance their economic interests if they care about being sustainable as firms. Considering their peculiar characteristics and especially their survival rate, Choi et al. (2018) encouraged SMEs to focus on their immediate stakeholders, like customers and suppliers, since they significantly impact their profitability and success.

However, the arguments against SME sustainability do not diminish its relevance since there is a consensus that sustainability is necessary. After all, researchers who highlight SME profitability cautiously use the term financial sustainability (Aggarwal, 2013; Alshehhi, Nobanee, & Khare, 2018). The concern, however, is ensuring that these “vulnerable” SMEs do not lose focus and make investments that will endanger their sustainability. Besides, the ability to undertake such laudable sustainability projects depends primarily on profits. It is, therefore, important for SMEs to define their own sustainability goals in terms of their abilities and strengths; and not to be pressured into plans that can derail their progress to attain total sustainability.

### **2.1.2 Sustainable entrepreneurship in the Ghanaian context**

Even though Ghana is a signatory to the UN sustainability pact, very little is known about Her contributions to sustainability through sustainable entrepreneurship. There is very little research on how entrepreneurs in Ghana incorporate sustainability into their activities. Available works prove that sustainable entrepreneurship has made little to no progress in the country. For example, Adomako et al. (2021) explored “chief executive officers’ sustainability orientation and firm environmental performance,” focusing on Ghana. Their paper pointed to a noticeable lack of existing literature in the context of Ghana, as they could not cite similar articles from Ghana in their work. Concerning their outcome, they concluded that there is a positive direct relationship between CEO’s sustainability orientation and environmental sustainability. They argued that when owners or managers have positive views and beliefs about the environment, it motivates implementing environmentally friendly policies.

Similarly, Bawakyillenuo and Agbelie (2021) discussed only the environmental aspects of sustainability. They found only a handful of papers related to Ghana, even though they thoroughly discussed entrepreneurship and sustainability. Their findings highlighted the role of demographic factors in whether owner-managers were interested in caring for the environment. These factors were: 1. Gender, females being more interested in the environment. 2. Education, showing that more educated owner-managers were inclined to care about the environment. 3. Location, where entrepreneurs operating in rural areas were more likely to be environmentally conscious than those in urban areas. 4. Entrepreneurs in highly competitive businesses/products were more likely

to care about the environment. The work called for enacting policies, educating, and encouraging entrepreneurs to be environmentally conscious.

In their work, Quagraine et al. (2020) exposed the gap in the literature on sustainable entrepreneurship in Ghana. That study explored micro-entrepreneurship and sustainable development goal one among Ghanaian women. The findings showed that the women entrepreneurs' primary purpose (or business objective) was acquiring financial resources and income. An interesting observation from their work is that despite reviewing several works of literature on the separate variables of sustainability and sustainability performance from several sources, the authors could not rely on literature from the Ghanaian or African context. The absence of sustainability performance literature from the Ghanaian context is unfortunate and requires further investigation.

The papers mentioned show that it is necessary to undertake sustainable entrepreneurship and sustainable business model research in the Ghanaian context. At least, it is essential to know the perceptions of Ghanaian SMEs on this matter. This is because Ghana, as a nation, is saddled with several sustainability problems. Besides, it is a signatory to the SDG pact, so the country is also responsible for contributing to sustainability. Similarly, such an inquiry would provide a complete picture of those issues instead of the one-sided view from developed economies that dominate the literature on sustainable entrepreneurship and sustainable business model. It must be noted that Ghana is a prominent country in Sub-Sahara Africa and shares several similarities with most of the Nations in that Region. A study from Ghana is relatable to all the Sub-Saharan countries and hence can provide insights into happenings in those countries. Considering the apparent gap in the sustainability literature regarding studies from developing countries and the other gaps already identified in the preceding write-up, the thesis focused on Ghana.

## **2.2 Problem statement and study objectives**

### **2.2.1 Research gap**

The arguments for BMfS are still at the conceptual stage (Owusu Yeboah et al. 2020), with very scanty empirical work especially involving large samples. This makes it very difficult to ascertain its viability and applicability. Such a situation makes it impossible for researchers and businesses to appreciate how it operates and how to reap its benefits (if any). Also, this current situation creates numerous theoretical gaps in the arguments for it. As an emerging field, it places some responsibility on researchers interested in the subject to investigate it further to develop additional and relevant theories to fully support and develop it (Schalttegger et al., 2012; Kristensen & Remmen, 2019; Owusu Yeboah & Novak, 2020).

Another gap in BMfS is how it directly impacts firms' sustainability performance and whether it is a better alternative to the status quo, i.e., corporate social responsibility and corporate philanthropy, which have been used extensively when it comes to attaining sustainability performance (Boachie Mensa & Owusu Yeboah, 2015). These strategies involve voluntary corporate giving toward social and environmental projects (Carroll 1999; Garriger & Mele Lai et al. 2010; WBCSD 1999). BMfS, on the other hand, deals with incorporating sustainability goals into every aspect of the firm value creation goals, i.e., the firm's activities, making it a deliberate business goal. Researchers must ascertain whether BMfS implies firms' sustainability performance and the extent to which it does.

Doing this is required since it will be consistent with business research fundamentals. The reality is that in most business research, whether quantitative or qualitative, there is usually an attempt to analyze the effect(s) of a particular variable on another (Boachie Mensah & Owusu Yeboah, 2015; Di Domenico et al., 2021; Dolega et al. 2021; Arrigo et al. 2021). By doing this, theory can be developed, expanded, and validated.

Further, the purpose of any new knowledge is to support practice; this offers another opportunity for researchers to empirically test their assumptions to determine how they apply them in real-life situations. As has been mentioned, very few empirical works exist to support the conceptual arguments in BMfS. Except for the many logical arguments, there is very scanty evidence on the practical usefulness of BMfS. It is essential to have more empirical studies on the concept. Another vital aspect of empirical studies is that it exposes the challenges of implementing the concept. This is because empirical studies present the theoretical issues (concepts) to respondents to express their views and opinions on them and provide an assessment of these concepts. By doing this, researchers can help improve the constructs for future studies when they identify problems. That is another gap that researchers must address.

The issue of interacting variables also presents another gap in the relationship between BMfS and sustainability performance. According to Namazi and Namazi (2016), this involves moderators and mediators that explore the exact conditions under which a phenomenon operates. They further provide four reasons why moderators and mediators are relevant in business research. These are 1. The complexity of business problems requires the use of moderators and mediators. 2. Without moderators and mediators, it becomes impossible to solve business problems. 3. Moderators and mediators expand the scope of existing theory. 4. Finally, moderators and mediators make it easier to respond to issues like "when," "how," and "why," which may concern the relationship between the two main variables. This makes it very relevant for researchers to study BMfS and how other external variables interact.

Concerning these issues, the current work aims to introduce market readiness. This construct explains the extent to which consumers are willing to support any firm

innovation, such as sustainability performance through BMfS. The work treated this variable as a moderator variable in the relationship between BMfS and firm sustainability performance. With the aid of this variable, it was possible to determine the strength of the relationship between the main variables, as seen in some studies (Kosiba et al., 2020; Vaccaro et al., 2012). Additionally, the study applied a mediator variable, business case drivers (BCDs). According to some BMfS scholars, business cases for sustainability (BCS) or business case drivers (BCDs) motivate firms to engage in sustainability or institute sustainability models. These drivers provide some form of compensation to firms for investing in sustainability. It is, therefore, argued that they serve as mediators for optimum sustainability performance in terms of sustainability models (Schaltegger & Burritt, 2018; Schaltegger et al., 2016; Schaltegger et al., 2012). Following the conceptual arguments, the purpose of this variable was to mediate between BMfS and sustainability performance.

From the preceding discussions, researchers suggest BMfS as a critical strategy in sustainability performance. This presents several research issues: the direct relationship between BMfS and sustainability performance, market readiness as a moderator, and business case drivers as mediators. The current thesis work aimed to address these and has provided some explanations about the relationship through empirical evidence.

### **2.2.2 Key research questions**

The main research question of the thesis was: “what is the perceived effect of business models for sustainability on SMEs' sustainability performance?” The following specific questions were formulated to assist in answering the main question.

*RQ1. What is the perceived relationship between BMfS and SMEs' sustainability performance?*

*RQ2. What is the perceived effect of perceived market readiness on the relationship between BMfS and SMEs' sustainability performance?*

*RQ3. What is the perceived impact of business case drivers (BCDs) on the relationship between BMfS and SMEs' sustainability performance?*

*RQ4. What are the perceived challenges of implementing BMfS among SMEs?*



### **2.2.3 Research objectives**

The primary purpose of this thesis was to examine the relationship between BMfS and firms' sustainability performance. The following specific objectives were formulated to achieve the specific goal:

*RO1. To ascertain the perceived relationship between BMfS and SMEs' sustainability performance.*

*RO2. To determine the effect of perceived market readiness on the relationship between BMfS and SMEs' sustainability performance.*

*RO3. To explore the perceived impact of (business case drivers) BCDs (if any) on the relationship between BMfS and SMEs' sustainability performance.*

*RO4. To Identify the perceived challenges associated with the implementation of BMfS among SMEs.*

### **2.2.4 Delimitation of the study**

This thesis aimed to investigate BMfS and its impact on SME sustainability performance in Ghana. This work focused on firms that are defined as small and medium enterprises. Larger firms operating in the country were not included in the study. Also, because the decision to implement BMfS lies with management, the respondents were either managers or owner/managers of the selected firms. Other categories of employees were not involved in the study.

The research also aimed to investigate respondents' perceptions of the variables under study. It was necessary to measure perceptions because it was impossible to collect data on actual happenings in these firms since most SMEs have not instituted BMfS. Finally, the data for the work was collected from Ghana, a developing country in Africa. This was to provide information from a developing country's perspective. As already indicated, much of the data and information on sustainability is on wealthy economies. This study aimed to determine whether the conditions in both worlds are comparable or applicable. Regarding these factors, it is stated that the results and conclusions from this study apply only to the boundaries set by the researcher following the research objectives of the thesis.

## **3 THEORETICAL AND CONCEPTUAL BASES FOR THE WORK**

### **3.1 Theoretical framework**

An essential aspect of any scientific inquiry is the theoretical basis or framework for the conceptual arguments, the model, and the proposed hypotheses. The theoretical framework guides the research in identifying the problem and setting the foundation for the entire research project (Lederman & Lederman, 2017). The thesis work is grounded in four theories. Three theories are prominent in sustainability discussions, with two being applied in several studies focusing on sustainability performance. These theories advance arguments on why and how firms should work towards sustainability performance and the variables that could influence sustainability performance. These theories were employed since this thesis was an inquiry into sustainability performance. These are sustainability-oriented, natural resource-based, and stakeholder theories. The last theory that was also employed is another major one in consumer behavior – the theory of planned behavior which was used to support the impact of the moderator variable on the direct relationship between the significant variables of the thesis. The role of these theories in backing the thesis is further explained in the rest of this section.

### **3.1.1 Sustainability-oriented theory**

Lozano et al. (2015) proposed this *new theory* based on their assessment and judgment of existing sustainability theories. According to their work, the current views do not fully satisfy the requirements for sustainability. The authors employed the iterative approach in developing this theory by using interpretations, specifically hermeneutics, as suggested by Dreyfus (1980). They further explained that their goal was to understand the whole from the pieces and vice-versa (Dilthey, 1972; Harrington, 2001) to construct a better theory for sustainability performance. They sought to develop "universally valid interpretations" of existing firm sustainability theories and drew their conclusions as the basis for their theory. To achieve their goal, they categorized the theories of interest into three main groups: entity or personality, nature of the firm, and the firm's obligation to the stakeholder (Seth & Thomas, 1994). Each of these groups (categories) contained a set of theories commonly applied to firm sustainability. After analyzing them, the authors determined their contributions to sustainability and conceived the "sustainability-oriented theory of the firm."

The sustainability-oriented theory of the firm is:

*"The firm is a profit-generating entity in a state of constant evolution. This entity is a system comprised of resources and networks of relationships with stakeholders. The firm's employees are responsible to represent the firm, manage its resources and empower its stakeholders so that the firm complies with laws,*

*maintains its "license-to-operate", increases its competitive advantage, and better contributes to fostering economic, environmental, social, and time dimensions."*  
(Lozano et al., 2015 p.440)

The authors claim that their newly developed theory is helpful in three ways. First, it provides firms and their stakeholders with the idea of achieving short-term and long-term sustainability. Second, it encourages governments to view firms as legally established entities with rights and responsibilities toward achieving sustainability. Finally, this new paradigm provides researchers with a new area in sustainability for further work.

Another research debate is whether there is a real need for a new sustainability theory. From their meta-analysis, the stakeholder theory, to no small degree, satisfies the three dimensions of sustainability, i.e., environment, social and economic. However, the proponents of this theory argue that time is a crucial indicator of sustainability since it plays a vital role. This work agrees that time is a necessary measure of sustainability; hence, any discussion on sustainability should consider time. Such an argument does not necessarily water down theories that do not explicitly discuss the relevance of time since it can also be argued that time is inherent in sustainability performance.

Such concerns about the sustainability-oriented theory do not invalidate it. Instead, they are somewhat necessary for validating the theory. It is common for other researchers to question and scrutinize new theories and concepts. For example, the general concept of business models has also had its fair share of such criticisms (Foss & Saebi, 2017; Massa, Tucci & Afuah, 2017), yet several scholars have successfully applied it. Considering that theory development involves a rigorous process, it is believed that the "sustainability-oriented theory of the firm" is a valuable tool for enhancing sustainability knowledge and is quite helpful for this thesis.

The sustainability-oriented theory supports the arguments for this work. Three reasons make it suitable for the BMfS discussion. First, the suggestion is that BMfS should be explored with different theories and disciplines (Sharma, Starik & Husted, 2007) to ensure a broader concept application. This reasoning makes the theory appropriate in the BMfS discussion and enables researchers to apply the BMfS concept in other fields and from several perspectives. For example, researchers in the natural sciences can discuss BMfS and analyse it through the sustainability-oriented theory lens when examining environmental issues.

Second, Abdelkafi and Täuscher (2015) argue that researchers should analyse BMfS using the systems perspective. This work believes that such a view would better enable the firm to achieve its sustainability goals by 1) satisfying all the dimensions, 2) working with all relevant stakeholders, and 3) using all available resources, whether tangibles or intangibles. This perspective is a holistic approach supported by the sustainability-

oriented theory of the firm. Unlike other business models with some semblance of sustainability, BMfS captures the essence of sustainability according to its proponents.

Finally, there is a need to analyze BMfS from a multilevel perspective (Collins & Saliba, 2020; Starik & Kanashiro, 2013). Although sustainability has a long-range objective of supporting the earth (Brundtland Report), BMfS focuses solely on the firm, giving it a micro perspective. With the aid of the sustainability-oriented theory, it is possible for firms to better engage with their stakeholders so that they can achieve the multilevel perspective that is being suggested.

The theory agrees that the firm is a profit-generating organization; however, it should work towards achieving social and environmental goals. The theory highlights that a responsible firm must contribute to society's social and environmental well-being. It agrees with the BMfS approach's principal argument, underscoring the need for firms to incorporate sustainability performance into their core business operations (Abdelkafi & Täuscher, 2016; Lüdeke-Freund & Dembek, 2017). That means all business activities should have sustainability considerations, from the minutest to the largest, within the BMfS framework. Such a position is consistent with the sustainability-oriented theory making it appropriate for the thesis.

### **3.1.2 Natural resource-based Theory**

The natural resource-based theory (NRBT) was birthed from the need to enhance the resource-based view; it can be seen as a solution to "deficiencies" in the resource-based view/theory (RBT) (Hart, 1995). The RBV explains how firms can build a competitive advantage using their resources and capabilities. It further explains that firms can benefit from their resources if they are valuable, rare, inimitable, and supported by some implicit skills. According to the theory, these attributes could result in advantages such as 1. firms being able to reduce their cost of operations. 2. Having more customers willing to pay more for their products. 3. Staying ahead and avoiding competition. 4. Commanding premium prices (Barney, 1991; Christmann, 2000; Hart & Dowell, 2011)

The problem, according to Hart (1995) and Hart and Dowell (2011), with RBV is that it does not accommodate the role of the natural environment in achieving competitive advantage. The author proposed the NRBT to remedy this situation by including the natural environment in gaining a competitive advantage. Hart (1995) argues that the natural environment has a role in firms' ability to attain and sustain competitive advantage; the environment can create opportunities or constraints in gaining competitive advantage.

An integral aspect of NRBT is the three-prong strategy: pollution prevention, product stewardship, and sustainable development. From the theory, pollution prevention

includes *minimizing emissions, effluents, and waste* and requires continuous improvements in the firm (Hart, 1995; Hart & Dowell, 2011). This aspect of the theory is closely connected with sustainability performance, as described by the Brundtland report (1987). Concerns about environmental pollution are a significant issue that firms are tasked to resolve. In this direction, some studies aim to assess the impact and performance of firms. Regulatory pressures also influence firms to be responsible and work at preventing pollution (Bhupendra & Sangle, 2016; Khanna et al., 2008).

Product stewardship minimizes product life costs and requires stakeholder involvement (Hart, 1995; Hart & Dowell, 2011). According to Bennett et al., 2018, product stewardship assesses a new product's health, safety, and environmental and social impacts. Takhar and Liyanage (2021, p.372) identify nine actions to ensure product stewardship. These are (1) *an assessment of materials used for the product*; (2) *products that minimize the use of hazardous chemicals* (3) *products that can be safely manufactured* (4) *products that can be produced without causing environmental issues* (5) *products which can be used safely* (6) *products which can be safely repaired* (7) *utilizing recycling schemes for the products* (8) *recycle and reuse of the materials used for the products* (9) *safe disposal of my products*. Like other researchers, Lane and Watson (2012) assert that product stewardship is vital for achieving social and environmental responsibility.

Finally, sustainable development is *minimizing the environmental burden of firm growth and development*. (Hart, 1995; Hart & Dowell, 2011). This strategy ensures that society and the environment are protected from the consequences of firms' growth in the long run. Here, the firm provides that it does not grow at the expense and detriment of society. It stresses a shared vision where firms work with society to ensure mutual benefits. Walls, Phan, and Berrone (2011) suggest that firms commit to strategies such as: implementing environmental sustainability processes, instituting sustainable supply chain management policies, stakeholder engagement, investments in ISO certification, long-term commitment to sustainable development, appointing senior environmental executives, and implementing environmental training.

The theory addresses the pertinent issues in sustainability and BMfS. It shows that firms should integrate environmental and social consciousness in all activities. It further highlights the need for firms to implement strategies to ensure sustainability for the firm, the environment, and society. NBRV wholly supports the arguments of this thesis since it captures the essence of sustainability.

### **3.1.3 Stakeholder theory**

Unlike the previous assertion by Friedman (1970) that only managers/owners had the right to enjoy value from the firm, the stakeholder theory bears the idea that other parties

have to reap value because of their association with the firm. These parties, according to the theory, are stakeholders. Freeman (1984), the proponent of this all-important theory, defined stakeholders as: “those groups or individuals who can affect or be affected” by the firm's actions. By providing this definition, the theory expanded the firm's responsibility to create value for all stakeholders (Freeman et al., 2010).

The theory has been applied to sustainability by researchers such as Sangle and Ram Babu (2007) and Wallis (2006), with Horisch et al. (2014) establishing deep connections between the theory and sustainability. The following are some arguments they put forward for the association. First, they insist that by expanding the firm's responsibility to include other stakeholders, both stakeholder theory and sustainability performance focus on social, environmental, and economic issues. Second, according to the authors, another point of convergence between stakeholder theory and sustainability is how they treat ethical problems. The authors explain that both ideologies call for the inclusion of ethical issues in business practice so that value creation can be attained responsibly or sustainably. Using this route, they both avoid residual corporate social responsibility, which only aims to compensate stakeholders for the firm's irresponsible actions. Third, the authors establish profit-making as another similarity between the theory and sustainability. According to them, both concepts highlight the need for firms to make profits which is in sharp contrast with the position of Aristotle and Thomas Aquinas, who argued that profit-making was immoral. Fourth, the long-term perspective of stakeholder theory is also shared by sustainability performance, according to the authors. This common characteristic of the two concepts places them in the domain of strategic management (Figge, Hahn, Schaltegger, & Wagner, 2002). Fifth, according to the authors, the two concepts introduce some necessary complexities in management. Both practices (or ideas) aim to work with stakeholders to ensure that social and economic objectives are also achieved in addition to attaining the firm's financial goals. They mention examples like encouraging employees to ensure energy efficiency and other ways to ensure cleaner production. According to the authors, the sixth connection between stakeholder theory and sustainability comprises *descriptive, prescriptive, and instrumental* aspects. The authors argue that stakeholder theory and sustainability provide ways to solve problems in the firm. These six points indicate the connection between the concepts and provide a basis for researchers to use them in empirical studies.

The overall aim of this thesis was to determine the relationship between sustainable business models and sustainability performance. Considering the connections made by Horisch et al. (2014), the stakeholder theory provides a theoretical guide and support for this work, as described by Lederman and Lederman (2015). Besides, the argument by the stakeholder theory that firms should cater to social and economic concerns is consistent with the sustainability indicators used in the thesis, namely economic, social, and environmental (Calik & Bardudeen, 2016; Warhurst, 2002).

The stakeholder theory also supports the mediator variable, i.e., business case drivers, since the theory is not anti-profit. The argument for business case drivers is that there should be motivating factors for embarking on sustainability projects (Carroll & Shabana, 2010; Salzmann et al., 2005). This position is probably based on the assumption that an automatic relationship may not exist between attempting to balance social and environment goals with economic goals (Schaltegger & Ludeke-Freund, 2012). Hence, the theory provides full support for not just the direct dimensions of sustainability but also for including the business case drivers when studying sustainability. Based on the discussion on stakeholder theory and its connection with sustainability, it makes it appropriate for this thesis.

### **3.1.4 Theory of planned behavior**

Several researchers have used this theory to study human motivations for adopting certain attitudes and behaviours (International Burch University et al., 2016; Kiriakidis, n.d.; Ma et al., 2020; Stewart, 1982; Sun et al., 2020). It proposes that attitude, subjective norms, and perceived behavioural control result in the intention to perform a given activity, consequently leading to changes in human behaviour. The argument is that the following conditions should prevail: (1) a person's attitude and those relevant (or essential) should be positive towards a *specific change* (2) the person believes that they have the power to make the change in question (3) the individual is motivated to take the necessary steps to achieve the desired change. The theory can be illustrated as follows: A person begins to entertain positive thoughts about supporting sustainability by using sustainable products (attitude). Then the person also realizes that persons who are relevant to them also have such thoughts (subjective norm), i.e., their friends and families also have similar ideas. The person then begins to entertain thoughts that it is within their power to support sustainability by switching to sustainable products (perceived behavioural control). These factors motivate the person (intention) so that the person begins to use sustainable goods to support sustainability. The three variables have been described as the bases for changes observed in human behaviour (Ajzen, 1991; Ajzen, 2011).

Like the other theories that have been employed in this thesis, this theory (TPB) has also been applied to sustainability from the consumers' perspective, where it was proven that the idea is sound when discussing customers' readiness to support sustainability goals (Chen & Tung, 2014; Dezdar, 2017).

## 3.2 Conceptual framework and hypotheses formulation

### 3.2.1 Development of the conceptual framework

Based on the summary literature review provided, a framework was developed for the thesis. The conceptual framework illustrated the relationships among the variables of the study. Consistent with the treatment of the variables in other studies and with the goals of this thesis, BMfS was treated as the independent variable. BMfS, as explained, is a strategy that aims to enhance sustainability. Therefore, the thesis aimed to ascertain its effect on the work, with the outcome variable being sustainability performance. The goal was to determine whether the independent variable impacted it as had been postulated by earlier studies in the thesis. Based on other conceptual and theoretical arguments, the thesis introduced a moderator (market readiness) and mediators (business case drivers). This was to explore their impact on the independent and the dependent variables. The conceptual framework for the study is shown in Figure 4.

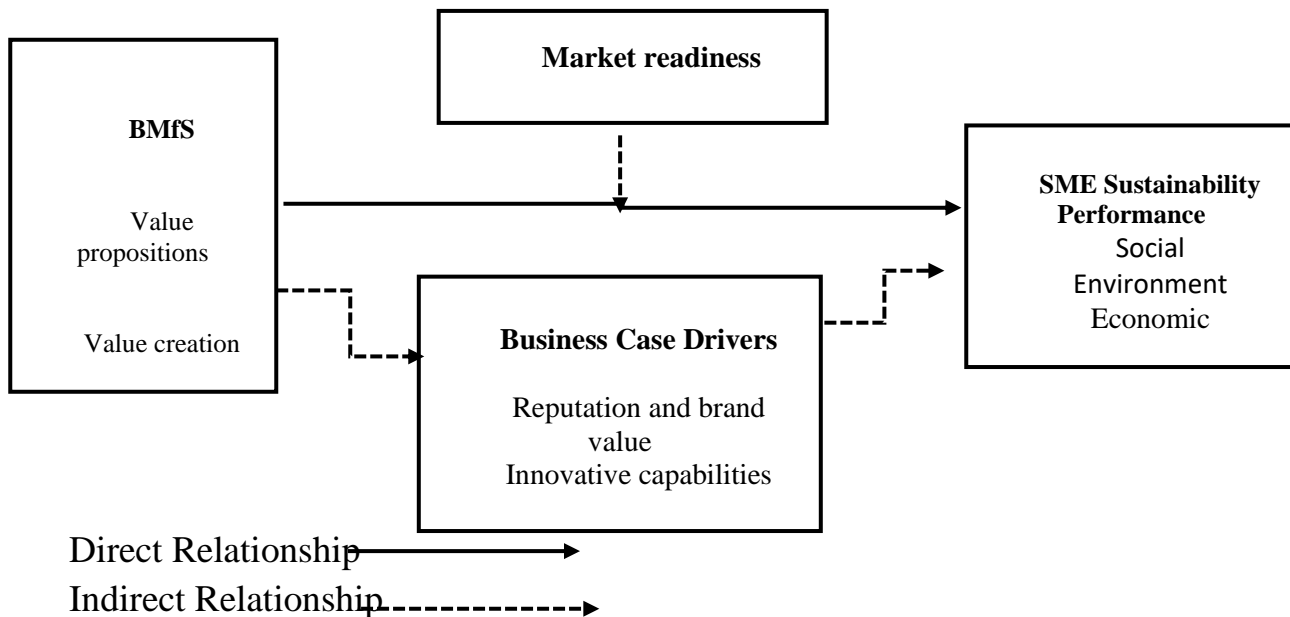


Figure 4: The conceptual framework for the study (Source: Author's Construct)

The framework shows a direct relationship between BMfS along with value proposition (VP), Value creation (VC), and SME Sustainability Performance (SP). Market Readiness (MR) is illustrated as moderating the direct relationship between BMfS and SMEs SP. Similarly, BCD and innovative capabilities (IC) and reputation and



brand value (RBV) also have direct relationships with SP; however, BCD further mediates the relationship between BMfS and SMEs' SP.

### **3.3 Conceptual arguments and hypotheses development**

#### **3.3.1 BMfS and SME's sustainability performance**

Attaining sustainability has become a noble business goal that most firms attempt to achieve (Port & Reinhardt, 2007; Tura et al., 2019). That is not because it is the easiest or the most profitable. Instead, it is demanded by relevant stakeholders who wield power and interest, though at varying degrees. Several firms are responding to these concerns by setting sustainability goals. Most firms identify and contribute to solving social and environmental issues along with their primary economic goals. They typically invest their profits in these areas to ensure sustainability and satisfy their stakeholders (Babiak & Kihl, 2018; Lamberti & Lettieri, 2008). Even though these actions are commendable, their effectiveness has come under scrutiny. It has been argued that these are less effective and are short-lived. This has led to the concept of sustainable business models being suggested by some researchers.

Stubbs and Cocklin (2008) are the pioneers of sustainability in business through *sustainable business models*. They argue that firms must operate “a model where sustainability concepts shape the driving force of the firm and its decision making.” According to them, when social and environmental goals are secondary to economic goals, the firm becomes ineffective in its sustainability goals (Freeman & Gilbert Jr., 1992; Shrivastava, 1995); hence, the need to establish sustainable business models. Other researchers have expressed similar opinions and suggested business models focused on sustainability. One of the most famous names for such business models is business models for sustainability (Ludeke-Freund & Dembek 2016; Schaltegger, Hansen, & Ludeke-Freund 2016). According to these researchers, such business models effectively create value for customers, the firm, and all other stakeholders (Collins & Saliba, 2020).

It is essential to appreciate the concept of business models so that business models for sustainability can be put into proper context. The Harvard Business Review (2011, p.5) reports that Joan Magretta defines a business model as “the story that explains how an enterprise works.” Similarly, Wirtz (p.3) also says that the “business model depicts a company's operational production and service systems.” Langley et al. (2020) summarize these thoughts as how businesses operate. A sustainable business model or a business model for sustainability, therefore, is a business model that is sustainability-focused, one that has been designed by a business to guide it to achieve sustainability goals.

The BMfS argument suggests that existing businesses must completely overhaul their business goals, activities, operations, processes, and programs to attain sustainability.

Firms would have to follow the “unfreeze-change-refreeze” approach as suggested by Lewin (1947) in Hussain, Lei, Akram, T., Haider, Hussain, & Ali (2018). This requires a paradigm shift in their approach concerning their goals and the value they aim to provide for their stakeholders. According to BMfS proponents, firms must incorporate goals, tactics, and strategies to achieve economic, social, and environmental outcomes (Abdelkafi & Täuscher, 2015).

On the other hand, new enterprises must begin by creating businesses geared toward attaining sustainability. The whole point of BMfS is that enterprises seeking to achieve sustainability are better off incorporating it into the very fabric of those organizations, thereby using the systems approach (Forrester, 2013). Therefore, firms must ensure that their value propositions and value creation elements are designed to reflect sustainability goals.

Value propositions constitute a significant dimension of BMfS (Schaltegger, Ludeke-Freund, & Hansen, 2012). Payne et al. (2017, p.1) explain it as “a strategic tool facilitating communication of an organization's ability to share resources and offer a superior value package to targeted customers.” Value propositions describe what a business promises to give to its customers or how it intends to satisfy its customers’ needs. Essentially, they form the core products/ services and associated services the business designs for existing and potential customers.

The arguments for sustainable value propositions are ripe in the value propositions literature, with several researchers arguing that businesses must develop sustainable value propositions (Gilles & Christine, 2016; Muller, 2012; Elkington, 1998). In this regard, Chandler and Lush (2015) and Patala et al. (2016) have contributed to developing the concept by providing suitable definitions. Beyond the definition, some authors have also produced works on value propositions. As a dimension of BMfS, further studies are undertaken to determine its direct contribution to BMfS and its role in ensuring sustainability performance.

The second dimension of BMfS is value creation (Schaltegger, Ludeke-Freund, & Hansen, 2012). Value refers to both the benefits of using a product/service and (or) the monetary measure for it (Antonopoulou & Begkos, 2019; Owusu Yeboah et al., 2020; Shulga & Busser, 2020). According to Singaraju (2016), value contributes to customer loyalty, another vital ingredient to firm success. This requires that businesses work assiduously to create value for consumers. Current literature on value creation suggests value co-creation, which is viewed as a more effective of ensuring value for customers since that involves customer participation in the value creation process.

Some researchers argue that value creation is vital to the sustainability agenda. According to them, several opportunities for value (co)creation can result in sustainability outcomes. For example, Zhao and Zhu (2010) and Weber (2002) cite the

economic benefits associated with value (co)creation through social media engagements. Also, Sharma and Iyer (2012) claim that social media engagements result in firms achieving environmental sustainability when used as a medium for value (co) creation.

The success of the BMfS approach in attaining sustainability is still in its infantile stage since there is a lot more work to be done on conceptualizing the constructs (Stubbs & Cocklin, 2008). There is, however, enough information in the current literature on how firms can approach the idea in their quest to attain sustainability. These contributions to the BMfS theory suggest that it may be the logical approach for sustainability. BMfS proponents suggest indicators that measure the construct (Clauss, 2017). In this regard, other researchers should expand the boundaries of knowledge on BMfS by making these measures meaningful so that scholars, policymakers, and business organizations can fully understand and use it. The thesis next discusses some empirical works on BMfS and sustainability.

Ribeiro et al. (2018) assessed the impact of business models on sustainability and its impact on sustainability performance. The sustainable business model was to address food waste in a developed country through a non-profit cooperative. The findings confirmed the usefulness of sustainable business models and their positive impact on all the sustainability performance indicators. Of course, as a non-profit organization, it was not saddled with the challenges that for-profit firms face.

Another empirical work on BMfS was conducted at Bark House; the study found that the firm was implementing sustainability practices by working with stakeholders, changing market perceptions and behaviour, and refining its core operations. The study concluded that the firm was reaping economic benefits through customer loyalty and higher returns even during economic recessions (Collins & Saliba, 2020). This study also gives evidence of the success of BMfS concerning sustainability performance.

The third work on BMfS under consideration was carried out in 2013. It examined green manufacturing and eco-innovation on sustainability performance. The authors Sezen and Cankaya (2013) indicated that green manufacturing had a significant positive impact on environmental and social sustainability; however, eco-product innovation did not substantially impact any of the three dimensions of sustainability. Again, this work shows how a sustainable business model positively impacts environmental and social goals.

Horisch et al. (2015) explored the effects of sustainability management tools on the environment. This study is also of interest to the thesis because the focus of the study, like this thesis, was on sustainability tools, something very similar to BMfS. The work was conducted in an industrialized country and surveyed the largest firms in those countries. The findings proved that such tools are effective in achieving environmental sustainability. This also provides some support for BMfS.

A study by Miroshnychenko, Barontini, and Testa (2017) claimed that (1) green practices resulted in future market value and profitability, (2) environmental drivers such as pollution prevention and green supply chain management primarily resulted in financial performance, (3) green product development played a secondary role on financial performance (4) that ISO14001 negatively impacts financial performance. This study also showed a relationship between sustainability practices (like BMfS) and financial performance. This study is relevant because it discusses an aspect of sustainability performance.

Alshehhi et al. (2018) similarly investigated sustainability practices on financial performance. This study examined 132 papers in high-ranking journals that had studied the variables. Their work suggested that 78% of those works reported a positive relationship between the variables. However, they observed that those works focused on the social dimension of sustainability. The finding suggests connections between sustainability practices and aspects of firm sustainability performance. Further, it exposed the gap in studies on sustainability in developing countries and supported the thesis's relevance.

The final study of interest was by Alonso-Martinez et al. (2021), conducted in Italy, Spain, and the United Kingdom. It also reports that BMfS does not influence overall sustainability performance. The study found that BMfS does not balance the three dimensions of sustainability as expected. Such a problem is more acute among profit-oriented firms.

Seven empirical works on the relationship between BMfS and Sustainability performance were considered in the thesis. Two specifically dealt with BMfS and sustainability performance and reported favourably on them (Collins & Saliba, 2020; Ribeiro et al., 2018). The issue with the two works is that in the case of Ribeiro et al. (2018), the study was about a non-profit organization with many volunteers. It had very few expenses compared with a regular for-profit firm. Besides, its value proposition and value creation were simplistic and less costly since they involved buying foods that would otherwise have been discarded. Lastly, the study was undertaken in a developed country, meaning the sustainability issue is ripe. The second case study, which also reported a favourable outcome, put social and environmental ahead of profits, hoping to earn profits in the long term. The firm was reported to have worked directly with stakeholders who fully appreciated the need to care for the community (Collins & Saliba, 2020). The other five were on related BMfS constructs and sustainability performance aspects. These essentially produced mixed reports, with many indicating a positive association among the constructs. They noted that several sustainability practices which are related to BMfS influence sustainability performance (Alshehhi et al., 2018; Horisch et al., 2015; Miroshnychenko, Barontini, & Testa, 2017; Sezen & Cankaya, 2013). Of course, as already indicated, the previous study by Alonso-Martinez et al. (2021)

suggested that BMfS did not support sustainability performance in all the countries it was implemented in.

Considering the conceptual arguments and all seven empirical works, the thesis argued that there is a basis for connecting BMfS and sustainability performance. The thesis formulated the following hypotheses:

*H1a: There is a direct relationship between value propositions and SMEs' sustainability performance.*

*H1b: There is a direct relationship between value creation and SMEs' sustainability performance.*

*H1c: There is a direct relationship between overall BMfS and SMEs' sustainability performance.*

### **3.3.2 Market (consumer) readiness and SME sustainability performance**

Market readiness is defined as the market's (consumers') willingness to change and accept innovation that the firm introduces. This concept has not gained much attention though it is very relevant in introducing innovation and technology. The thesis argued that the market's readiness is a major determining factor in firms' sustainability performance; hence, it incorporated it into the model. Even though the earlier hypothesis is that BMfS directly influences sustainability, it is argued that market readiness could have a positive impact, as it has been explained using the theory of planned behaviour. The market (consumers) is an important stakeholder that plays a significant role in various aspects of the firm's activities (van der Werff, Thogersen & de Bruin, 2018). So, its readiness is a relevant variable in firms' sustainability.

In discussing readiness, Parasuraman (2000) explained it as optimism, innovation, discomfort, and insecurity. According to that work, these determined the extent to which the market was willing to accept any innovation. The first two are positive indicators for readiness, while the last two are negative for readiness. The likelihood of readiness was high when the market was optimistic about innovation being present. On the other hand, when discomfort and insecurity were present, the expectation was that the market was likely not ready for the innovation. The influence of market readiness was considered an exciting phenomenon in the BMfS and sustainability framework especially considering the impact of customers in the study by Collins and Saliba (2020). It must be stated that readiness has been studied in various forms by some researchers (Radenkovic, Bogdanovic, Despotovic-Zrakic, Labus, & Lazarevic, 2020; Zhang, Sun, Yang, & Wang, 2020; Kobos, Malczynski, La Tonya, Borns, & Klise, 2018). Therefore, it can also be applied in any other study from the markets' perspective, as has been done in the thesis.

The theory of planned behaviour provides the rationale for assessing the role of market readiness in the relationship between BMfS and sustainability. The theory explains that

attitude, subjective norms, and perceived behavioural control contribute to human behavioural intention. When all these are positive, the result is that humans are more likely to yield to a specific behaviour (Ajzen, 1991; Ali et al., 2019). In similar regard, the thesis argued that market readiness could play a vital role in sustainability when; 1. the market (customers) has a favourable attitude, and they are willing to support firms that are involved in sustainability endeavours, 2. subjective norms create the atmosphere that sustainability is vital, and 3. the market perceives that accepting sustainability is rational and lies within its control. Many studies on these constructs (attitude, subjective norms, and perceived behaviour) and the theory of planned behaviour show that consumers are willing to support sustainability efforts (Albayrak, Aksoy & Caber, 2013; Chen & Tung, 2014; Gadenne et al., 2011; Kim et al. 2013; Tan, Ooi & Goh, 2017; Wang, Wang & Guo, 2017; Webb et al., 2013). Since it is possible to relate the theoretical constructs to the market in general, the thesis hypothesizes that market readiness indirectly affects BMfS and sustainability. Additionally, these arguments indicate an existing gap in the sustainability literature.

On the bases of the preceding arguments, it was hypothesized that:

*H2: “Market readiness moderates the relationship between BMfS and SME sustainability performance.”*

### **3.3.3 Business case drivers and sustainability**

Business enterprises have traditionally been founded for the sole purpose of making profits. The call for sustainability is an additional responsibility for these enterprises. The challenge is that the obligations imposed by sustainability, i.e., social and environmental, “compete” with the economic pursuits of the enterprise (Wagner, 2007), a situation that can potentially repress the growth of the business. Current studies on the economic benefits of sustainability have not been very conclusive, and for most entrepreneurs, it may seem impractical. For this reason, researchers insist that there should be business case drivers (BCDs) or business cases for sustainability to encourage the shift to BMfS (Charles Jr, Schmidheiny, & Watts, 2017; Schaltegger, Hörisch, & Freeman, 2019; Schaltegger, & Wagner, 2017; Whelan, & Fink, 2016). In simple terms, BCDs are motivators for undertaking sustainability models. As the name suggests, they drive sustainability performance by providing instrumental value to firms. Schaltegger et al. (2012) compiled six of these drivers from existing literature these are costs and cost reduction (Christmann, 2000; Epstein & Roy, 1996), risk and risk reduction (Schaltegger et al. (2012), sales and profit margin (Porter & van der Linde (1995a, b), reputation and brand values (van Marrewijk, 2003), attractiveness as employer (Revell et al., 2010) and innovative capabilities (Cohen & Winn, 2007; Hansen et al., 2010b). In putting forth this argument, Schaltegger et al. (2012) provide three conditions these business case drivers should satisfy. They should 1. contribute to solving societal or environmental

problems; 2. create a positive business effect, and 3. be made by a management activity intended for societal, environmental, and economic benefits. These drivers influence the relationship between the firm's sustainable initiatives and its consequence, i.e., sustainability performance (Schaltegger et al., 2012; Abdelkafir & Täuscher, 2015). The influence of business case drivers on economic performance is theoretically and empirically well-known. However, empirical works on its mediating role are probably non-existent. This is yet another goal of the empirical study. The current study focused on two commonly listed business case drivers –innovative capabilities and reputation and brand values (Cohen & Winn, 2007; Hansen et al., 2010; van Marrewijk, 2003). These were selected based on theoretical and conceptual studies that indicate that these mediators can enhance the linear relationship between BMfS and SME sustainability.

The role of innovative capabilities in sustainability performance is well discussed in recent sustainability literature. For example, Benitez-Amado, Perez-Arostegui & Tamayo-Torres (2010) hypothesized that innovativeness was a key predictor in developing green management capabilities. Their study results supported the hypothesis that innovation was vital to ensuring that information technology impacts corporate sustainability. Another related study by Bamgbade et al. (2019) also indicated that banks' innovativeness was strategic in ensuring sustainability. Klimontowicz (2019) concluded in their research involving large construction firms that innovative capabilities are vital for social sustainability. The role that innovation plays in the BMfS and sustainability relationship is similar to how green product innovation mediates the relationship between green process innovation and a firm's financial performance. All these studies highlight the theoretical and empirical bases for linking innovativeness to sustainability.

The second mediating variable in the study is reputation and brand value. This has also been shown in extant literature to drive sustainability performance, even though other studies have proven a reverse relationship (Gomez-Trujillo, Velez-Ocampo & Gonzalez-Perez, 2019). Miles and Covin (2000) claim that reputational advantages positively affect financial performance, which are aspects of sustainability performance. Similarly, Neville et al. (2005) explain that corporate reputation affects corporate social performance, which also relates to sustainability performance. Finally, Parguel et al. (2011) concluded that when customers perceive CSR efforts, this influences firms' sustainability ratings. These findings indicate that reputation and brand value enhance sustainability. Hence, it was hypothesized that:

*H3a: There is a direct relationship between Reputation and Brand Value and SMEs' sustainability performance.*

*H3b: There is a direct relationship between Innovative Capabilities and SMEs' sustainability performance.*

*H3c: There is a direct relationship between Business Case Drivers and SMEs' sustainability performance.*

*H3d: Business Case Drivers mediate the relationship between BMfS and SME sustainability performance.*

So far, the thesis has presented a summary of the basis for the work. It has explained the position, the variables of interest, and their relationships. It started with the background of the study and presented the gaps that the thesis sought to fill. In addition, the central thesis objective was unveiled along with suitable research objectives. This part of the work ends with a list of prominent works on sustainability business models. This is presented in Table 1. The next part of the thesis focused on the theories that formed the basis for the arguments in the work. Four theories that relate to the constructs were selected to explain the relationships. The final part of this section was on relevant literature and how they connect the constructs of interest. With empirical, conceptual, and logical reasoning, a model and hypothesis were also developed for the thesis.



Table 1 Works that have explored sustainability business models

S/N	Authors	Topic	Theoretical Basis	Methodology	Conclusions
1	Stubbs, W. & Cocklin, C. (2008)	Conceptualizing a sustainable business model	Ecological modernization of sustainability.	Abductive research strategy combined case study and grounded theory. The aim is to construct theory from everyday organizational activities to create an "ideal construct."	<p>SBM defines an organisation's purpose using economic, environmental, and social aspects of sustainability.</p> <p>SBM uses a TBL approach to measure performance.</p> <p>SBM considers the needs of all stakeholders.</p> <p>Sustainability champions drive the cultural and structural changes necessary to implement sustainability.</p> <p>SBM treats nature as a stakeholder</p>

					<p>SBM is both a system and firm-level strategy</p> <p>Stubbs, W. &amp; Cocklin, C. (2008 pp121-123)</p>
2	Ludeke-Fruend, F. (2010)	Towards a conceptual framework of business models for sustainability	Corporate sustainability, specifically, eco-innovation and value creation.	A theoretical deductive approach to develop a conceptual framework based on sustainability strategies, eco-innovation, the role of business models, and their benefits.	A sustainable business model ensures competitive advantage through superior customer value. It also contributes to the sustainable development of both the firm and society at large. It concludes that creating a sustainable business is crucial for creating extended customer value for individual customers and community, i.e., private and public benefits. Ludeke-Fruend, F. (2010, p.23)

3	Boon, F. & Ludeke-Fruend, F. (2013)	Business models for sustainable innovation: state of the art and steps towards a research agenda	Business model perspective and value proposition.	Qualitative approach using a literature review.	The study concludes that business models and sustainable innovations are interrelated. The work also situates business models within the context of corporate sustainability and sustainability innovations.
4	Roome, N. & Louche, C. (2016)	Journeying toward business models for sustainability: A conceptual model found inside the black box of organizational transformation	Sustainable development and value creation	Qualitative approach using case studies	The work proposes that existing firms undergo phases such as identifying, translating, embedding, and sharing to institute sustainable business models. These phases involve realising the need to change since their existing business models may hurt the environment and other stakeholders (identifying). Second, developing radical strategies to ensure transformation in

					line with business goals (translation), which are then incorporated (embedding) into the firm's activities, and finally, sharing the strategies developed internally and with other stakeholders within the value chain.
5	Schaltegger, S., Hansen, E. G., & Ludeke-Freund, F.(2016)	Business models for sustainability: A co-evolutionary analysis of sustainable entrepreneurship, innovation, and transformation.	Sustainable entrepreneurship theory and business model perspective	Qualitative strategy to develop a theoretical framework for business models for sustainability.	The work concludes that firms aiming to integrate sustainability into their existing business models should implement three core evolutionary processes, i.e., variation (changes to existing business models), selection (eliminating unsustainable components), and retention (implementing a sustainable business model that ensures growth).

6	Rauter, R., Jonker, J., & Baumgartner, R. J. (2017)	Going one's own way: drivers in developing business models for sustainability	Sustainable entrepreneurship theory	Qualitative empirical work	<p>The definition of sustainability among the firms differed.</p> <p>It was also concluded that among the firms, the focus of BMfS was not for instrumental purposes but primarily based on the value concept of the owners.</p> <p>Sustainability strategies had to be incorporated into existing business models. This could be done by radically changing the focus on the business model to align with sustainability goals and include more stakeholders.</p> <p>There was a need for some policy support in sustainability regarding tax incentives, public</p>
---	---	---	-------------------------------------	----------------------------	---

					procurement, and public tenders.
7	Rosca, E., Arnold, M. & Bendul, J. C. (2017)	Business models for sustainable innovation- an empirical analysis of frugal products	Business models, Value propositions, Sustainable innovations	Multiple case study	Frugal and reverse innovation do not support BMfS; hence these should be handled separately.
8	Tauscher, K. & Abdelkafi, N. (2018)	Scalability and robustness of business models for sustainability: A simulation experiment	Sustainability Performance	Quantitative research using simulation modeling	<p>Through a simulation study, it was determined that firms could attain growth.</p> <p>That a successful sustainability model needs to be economically sustainable.</p> <p>The study also showed that by creating value for customers, the firm contributes to sustainability through BMfS.</p>

9	Long, T. B., Looijen, A., & Blok, V.	Critical success factors for the transition of business models for sustainability in the food and beverage industry in the Netherlands	Sustainability entrepreneurship	Qualitative research	BMfS can only be successful if there is a straightforward narrative, vision, continual innovation, sustainable foundation, profitability, and favorable external factors.
10	Schnieder, S. & Clauss, T. (2020)	Business Models for sustainability: Choices and consequences	Sustainability performance	Qualitative research	<p>BMfS involves combining sustainable and economic institutional logic.</p> <p>Managers play a crucial role by being consistent in their actions.</p> <p>BMfS involves fostering partnerships and community building.</p> <p>BMfS, however, presents limitations and restrictions for firms.</p>

Source: Author's literature review

## 4 METHODOLOGY

### 4.1 Research Design

The research focused on sustainable business models and their impacts on firm sustainability performance. Considering that research on sustainable business models is scanty, the work undertook an extensive literature review on the concepts and other related literature. Additionally, appropriate theories were selected to provide a basis and logic for the entire thesis. The work sort to fully explain and operationalize the main variables of the study so that readers can comprehend them and the work in general. Such extensive literature reviews also resulted in the developing of a conceptual framework and hypotheses to achieve the study's goals.

The thesis was executed using the quantitative approach, which involves collecting and analyzing data quantitatively (Creswell, 2003; Leedy & Ormrod, 2001; Williams, 2007). This approach is practical because it follows current trends in business research. It allows researchers to test hypotheses based on sound theoretical and conceptual analyses. Through quantitative methods, researchers can understand and generalize the findings of their studies to the population of interest (Reilly & Jones, 2017). Creswell (2014) explains that this approach helps answer the *how* issues in research. This research approach enables researchers to fully appreciate implicit and explicit factors that affect the understanding, selection, and application of their variables, such as sustainable business models and their outcome on SMEs' sustainability performance.

The choice of this approach was based on the aims and goals of the research. The work was guided by research hypotheses, which involved determining perceptions about potential causal relationships – direct and indirect. The thesis further aimed at generalising the perceptions gathered from the responses to the broader population of interest. These factors made it imperative to use the quantitative approach in undertaking the thesis. This approach is based on responses from an “appropriate” sample size using a research instrument that measures the variables and uses suitable items formulated for the variables. The instrument captures the responses so that they can be analysed and further discussed to ascertain whether the hypotheses developed for the study should be accepted or not (Leedy & Ormrod 2001). According to Williams (2007), this research approach relies heavily on numeric or statistics and is independent of the researcher leading to objectivity in assessing reality.

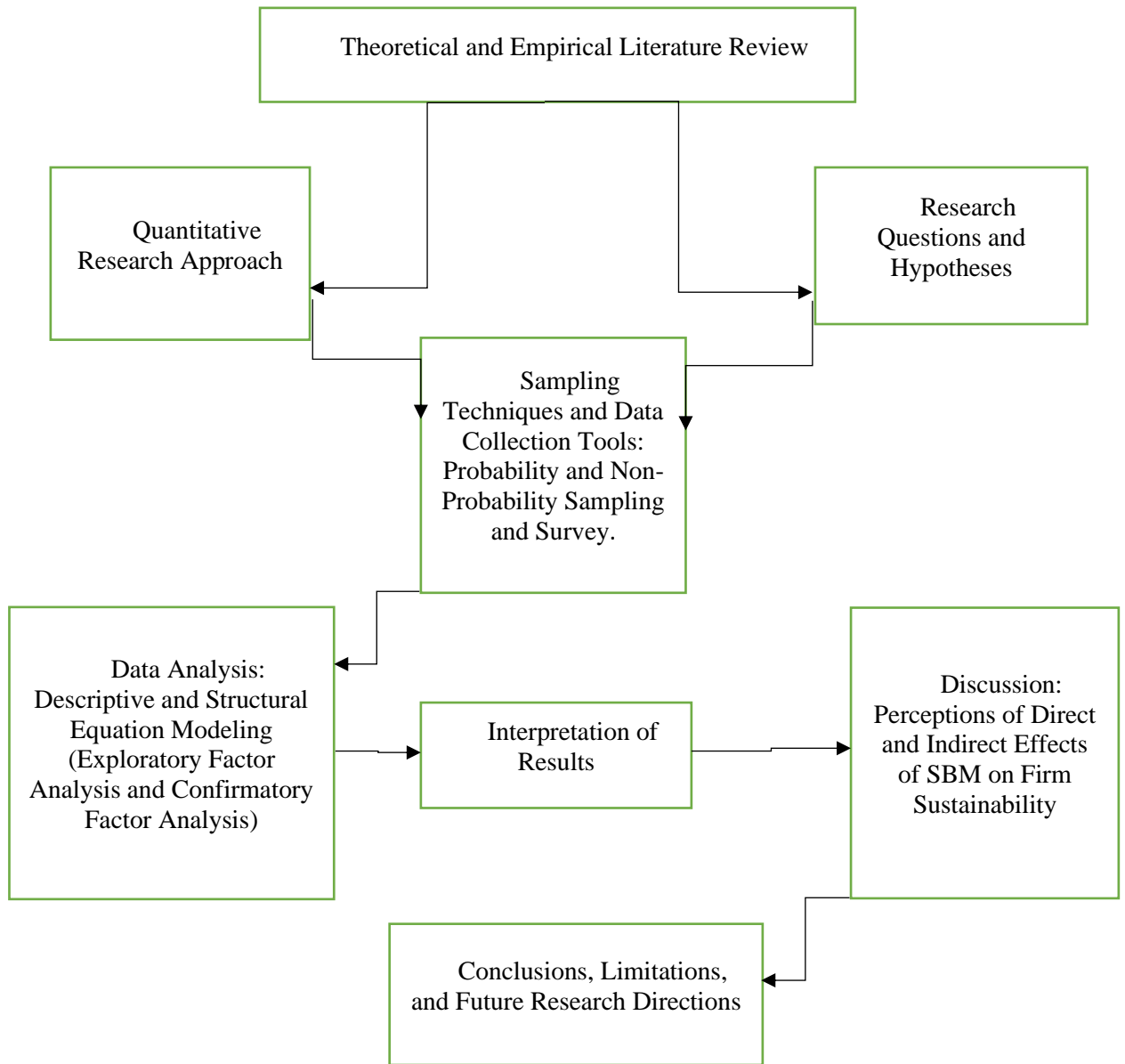
By focusing on the deductive approach, the study avoided unnecessarily repeating qualitative inquiry since some peer-reviewed studies have been published by experts in the area. For example, Curtis and Mont (2020), Gauthier and Gilomen (2015), Rauter et al. (2015), Rossignoli and Lionzo (2018), Roome and Louche (2016), and Salum et al.



(2019) all have adequately explored the concepts of the current study and have established the existence of BMfS and its potential role in sustainability performance. As mentioned earlier, the significant gap in the literature is the lack of large quantitative studies to ascertain and validate the qualitative or conceptual claims in the ongoing discussion.

The nature of the thesis inquiry also made it an exploratory work. This is because the work's constructs and relationships are largely under-explored. Besides, practically no study in the area covers this thesis's scope and nature. These provided a tangible basis for developing this thesis in this manner.

Another vital issue is the ontological and epistemological perspective of the thesis. The researcher admits that the work is analysed from the positivist and objectivist positions. The researcher agrees with proponents of such views and expects that reality can be discovered using this scientific work. The researcher further aims to merely describe the existing relationships in the proposed model based on the result of the scientific inquiry without any attempt to incorporate personal subjective views (Krauss, 2005). These positions also make it prudent to use the quantitative approach to undertake the study. Figure 5 summarises the approach to the study.



*Figure 5: General Framework of the Study (Source: Author's construct)*

In Figure 5, the entire study is presented showing all the activities undertaken as contained in the thesis write-up. Some of these have already been discussed. The rest of the sections will address the remaining activities and, most significantly, provide the basis for choices that have been made.

## **4.2 Study area, population, and sample for the study**

The study involved several firms across all sectors, classified as small to medium-sized firms in Ghana. Ghana is in West Africa and was colonised by Great Britain until 1957 when it attained its independence and became the first Sub-Saharan nation to do so. The country covers an area of about 238 535 km<sup>2</sup>. It is bordered on the west by Ivory Coast, east by Togo, north by Burkina Faso, and south by the Atlantic Ocean. It is a multi-cultural and multi-ethnic country and hence steeped in rich diversity. According to the recent population and housing census from the Ghana Statistical Service, the country has a population of about 32 million people scattered in its 16 Regions. It is primarily dependent on agriculture at the subsistence level but also has a fast-growing service sector, with most of its industries located mainly in the capital city, Accra, which incidentally is in the smallest Region in the country (Greater Accra Region).

The expectation was for it to become an industrialised nation and reap the benefits associated with industrialisation, namely higher incomes, higher standard of living, and economic stability. Since independence, successive governments have attempted industrialisation drives, and even though some progress has been made, the country is far from achieving a decent level of industrialisation (Boakye, 2018). The situation is even more appalling considering that the country is endowed with resources of all kinds and in vast quantities. Some of these natural resources are gold, diamond, bauxite, arable land, the sea, cocoa, and crude oil, to mention a few. Yet almost all the natural resources are exported in their raw forms resulting in very little value for the country. Despite its unsatisfactory performance, the country maintains prominence on the African continent, especially in the sub-Saharan Region.

Ghana was selected because it satisfied the conditions of the study. i.e., a developing economy. Ghana is a sub-Saharan West African nation with several similarities with most of its neighbours. For example, the country's economic and social status is like countries such as Nigeria, Benin, Cote d'Ivoire, and Cameroon. The country, like its neighbours, unfortunately, falls in the developing nations category (World Bank, 2022) despite it having many natural resources, not to mention its large and youthful population that could serve as a tool for development.

The nations within the sub-Saharan African enclave share very similar conditions regarding opportunities and challenges. In most studies, they are lumped up as one since the expectation is that experiences from one of the countries can be generalised to the entire Region (Fagbemi, Nzeribe, Osinubi, & Asongu, 2021). The study concluded that a study from any prominent country within the Region could provide some insights into happenings in other parts of the Region.

A survey of this nature from this part of the world would significantly contribute to the literature on sustainability performance in the sense that it would provide insights

into the perceptions of entrepreneurs on the subject. Additionally, it was considered that access to data for this study would be much easier in Ghana than in other developing economies due to the country's interest in sustainability issues.

The population for this study was all Small to medium-sized firms in the business hub of Ghana. This is the Greater Accra Region which houses almost all the major firms in the country. The researcher targeted all SME associations in the Region that could be identified through online searches. These associations were contacted for their assistance in reaching their members with the instrument since it was practically impossible to identify the firms individually. It was also impractical to reach them in person; hence, it was determined that an online survey with assistance from the business associations was the best approach for the thesis. This strategy ensured a large pool from which data could be collected within a reasonable time frame. The researcher estimated that the total number of targeted firms was several thousand since it was impossible to get the accurate number, probably due to poor record keeping and also issues of data privacy.

Considering that this study followed the deductive approach, the thesis aimed to sample a large pool of respondents. A two-step sampling procedure was adopted; (1) purposive sampling technique was used to target all the business associations operating in the Greater Accra Region of Ghana. The researcher then personally visited these associations and introduced the thesis and its goals to them. (2) The census approach was used to target all the members. The associations emailed the link to the instrument to their members. These associations are the Association of Ghana Industries, the National Board for Small-Scale Industries, and the Ghana National Chamber of Commerce and Industry. These associations were contacted regularly to remind their members about the instrument.

Given the analysis for the study, the researcher targeted a minimum of 200 respondents for the thesis. These respondents were to be owners, managers, or owner-managers. The reasons for targeting this minimum number of respondents are: one, the researcher relied on the sample size calculator provided by Soper (2015; 2019). The recommended sample size considers the effect size, the desired statistical power, the number of predictors, and the alpha level. In the thesis, these are 0.15, 0.8, 7, and 0.05, respectively. The calculator computed 103 as the minimum sample size for the study. The researcher could use a sample size of 103 or higher based on this method. This method of determining the sample size has been argued for and used in works such as Borenstein, Cohen, Rothstein, Pollack, and Kane (1992) and Cohen (1992). The second factor that informed the sample size was the suggestion by Kline (2011), Peng & Lai (2012), and Schumacker and Lomax (2004). According to them, a sample size of about 100-200 is useful for PLS-SEM analyses. Third was the suggestion by researchers such as Vesey and Salooje (1987) and Tinsely and Tinsely (1987), who entertained the belief that the robustness of PLS allows for small sample sizes between 100-150. These three factors collectively resulted in

targeting about 200 respondents for the thesis. The number was deemed appropriate because it was set above the minimum suggested number by all the researchers consulted during the thesis work. Selecting an “appropriate sample size” is crucial in studies like these as it has implications for practical conclusions and generalization (Kirk, 2007, Tabachnick & Fidell, 1996).

## **4.5 Research instruments**

### **4.5.1 Questionnaire**

A survey instrument was to serve the purpose of validating the findings of existing qualitative studies that argue that sustainable business models influence firms’ sustainability performance (Ludeke-Freund 2019; Ludeke-Freund & Dembek, 2016; (Schaltegger et al., 2016; Stubbs and Cocklin (2008). The questionnaire was self-administered and consisted primarily of close-ended items. These were carefully formulated to capture all the research questions (or objectives). Also, the instrument captured items relating to all the study variables. These items were measured on the agreement scale ranging from 1 to 7, with 1 being the least in agreement and 7 being the highest in agreement.

Enormous effort was invested in developing the instrument and the items. These items were all developed based on the literature on or related to the variables that make up the model. The items for BMfS, i.e., value propositions and value creation, were from Bocken (2014), Claus (2017), Dijkman et al. (2015), and Ulaga (2003). Concerning sustainability performance, items from Calik and Bardudeen (2016) were adapted to make them suitable for the current thesis. The research relied on Yusof and Mohd Shafiei (2011) for the items for market readiness. Finally, the items for BCD were developed by Davies et al. (2003) and Schaltegger et al. (2012).

The sections on the actual variables for the study had a total of 30 items on all the variables. Of course, other relevant questions formed part of the instrument but were not about the variables. The 34 items were reached after initial testing, which required that some of the items be dropped to enhance the quality and relevance of the instrument and, ultimately, the quality of the model. The relevant sections of the questionnaire are presented in Table 2.

Table 2 Measurement instrument for study variables

Constructs	Items	Source adapted/adopted	Scale
<b>Business Models for Sustainability</b>		Bocken,2014; Clauss, 2017; Dijkman et. al., 2015; Ulaga, 2003	1(least in Agreement)-7 (Highest in Agreement)
Value Propositions	<p>Our products should be in line with the demands of existing customers.</p> <p>We should aim to provide products that address the problems of our customers.</p> <p>We should constantly seek new customer segments and markets for our existing products and services.</p> <p>We should regularly utilize distribution channels that support our customers.</p> <p>We should try to maintain customers by addressing the needs of our target markets.</p>		
Value Creation	<p>We should ensure that we provide our customers with quality products.</p> <p>We should support our customers before, during, and after-sales.</p> <p>We should offer competitive product prices to our customers.</p>		
<b>Firm Sustainability performance</b>		Calik & Bardudeen, 2016	
Economic	<p>We may increase our annual sales if we are sustainable.</p> <p>We may avoid regulatory fines if we are sustainable.</p>		

	<p>We may increase our investments in R&amp;D if we are sustainable.</p> <p>We may save on costs by being sustainable.</p>		
Environment	<p>We should reduce our packaging materials.</p> <p>We should focus on using renewable resources.</p> <p>We should reduce our energy consumption.</p> <p>We should have specific strategies for protecting the environment.</p>		
Social	<p>We should recruit people from ethnic minorities, older workers, and women.</p> <p>We should ensure employee empowerment.</p> <p>We create opportunities for both internal and external communication.</p>		
<b>Business Case Drivers</b>		Schaltegger et al (2012)	
Reputation and brand value	<p>We perceive that integrity is a core feature of our relationship with our stakeholders.</p> <p>We perceive that we have a reputation for competence.</p> <p>We think that our stakeholders believe that we are a modern and trendy organization.</p> <p>We believe we incorporate elegance and prestige in our offerings.</p>		

<p>Innovative capabilities</p>	<p>We believe we can develop new products with unique technical specifications and functionalities.</p> <p>We perceive that our firm sees creating new products and services as critical tools.</p> <p>We perceive that our firm develops in-house solutions to improve our manufacturing processes.</p>		
<p><b>Market Readiness</b></p>	<p>We think that even when our products have slightly higher prices (due to sustainability), it would attract customers.</p> <p>We think that even when our products have far higher prices (due to sustainability), it would attract customers.</p> <p>We think that low-income groups would be interested in buying from us if we are sustainable.</p> <p>We think that medium-income groups would be interested in buying from our firm if we are sustainable.</p>	<p>Yusof &amp; Mohd Shafiei (2011)</p>	

*Note: constructs were measured on a 7- point Likert scale (1= least in agreement; 2= somehow in agreement; 3 = in agreement; 4 = somehow high in agreement; 5= high in agreement; 6 = very high in agreement; 7= highest in agreement)*

#### **4.5.2 Pre-test**

The instrument was initially given to some experts in the subject area to make suggestions to fine-tune it. This resulted in proper wording and construction to make it understandable to the respondents and simultaneously ensure the instrument's validity. Appropriate and necessary changes were made to the data collection tool before it was eventually sent out for the actual data collection. This was necessary because even though all the items were from existing validated scales, most were adapted to make them suitable for the proposed study.



Additionally, a pre-test was conducted before the final administration of the questionnaire. The researcher identified forty-five (45) SMEs in the second-largest city in Ghana. These SMEs shared similar characteristics with the population of interest and were in opposition to providing responses and reactions like the population of interest. With the help of research assistants, the researcher dedicated an entire month to purposely identifying these and requested their assistance in filling out the instrument. Getting the firms to cooperate with the work was relatively easy, especially when they received a copy of the introductory letter from the researcher's school.

Additionally, the presence of the research assistants made it difficult to decline the request to participate in the pre-testing. At the end of the period, all the SMEs returned the filled instruments to the research assistants. This preliminary work was undertaken to ascertain the instrument's reliability, as in most research projects. The results of the initial testing of the instrument are reported in Tables 3 and 4.

The findings in Table 3 show that all the indicators loaded significantly based on the suggested benchmark values. The composite reliability was between 0.844-0.938 compared to the suggested  $>0.60$  (Bagozzi & Yi 2012), Cronbach Alpha of 0.754-0.925 as against  $> 0.70$ , and the AVE also ranged between 0.540 to 0.679 against the suggested 0.50 (Fornell & Larcker, 1981; Hair, Babin, & Anderson, 2010). These results indicated that the instrument was reliable for the study.

Additionally, discriminant validity was also verified using the Fornell-Larcker criterion. The output, as indicated in Table 4, shows that all the values of interest are highlighted in the diagonal and are higher than those in their respective rows and column.

Table 3 Construct reliability (Preliminary testing)

<b>Variables</b>	<b>Sub Var.</b>	<b>Proxy</b>	<b>Loadings</b>	<b>Composite reliability</b>	<b>RHO</b>	<b>Cronbach alpha</b>	<b>AVE</b>
BMFS				0.932	0.930	0.918	0.540
	VP			0.930	0.914	0.904	0.727
		VP1	0.886				
		VP2	0.775				
		VP4	0.920				
		VP5	0.757				
		VP6	0.911				
	VC			0.902	0.886	0.871	0.606

		VC1	0.800				
		VC2	0.844				
		VC3	0.834				
		VC4	0.754				
		VC5	0.726				
		VC6	0.700				
MR				0.888	0.8364	0.835	0.665
		MR1	0.744				
		MR2	0.854				
		MR3	0.865				
		MR4	0.795				
BCD				0.937	0.937	0.925	0.541
	IC			0.894	0.849	0.840	0.679
		IC1	0.797				
		IC2	0.870				
		IC3	0.892				
		IC4	0.728				
	RBV			0.938	0.930	0.923	0.659
		RBV3	0.855				
		RBV4	0.828				
		RBV8	0.803				
		RBV9	0.925				
		RBV10	0.797				
		RBV11	0.781				
		RBV12	0.741				
		RBV13	0.720				
SP				0.916	0.910	0.904	0.548
	SOC			0.844	0.753	0.754	0.575
		SOC1	0.758				
		SOC2	0.740				
		SOC4	0.813				
		SOC6	0.721				
	EVN			0.875	0.829	0.822	0.585
		EVN1	0.799				
		EVN4	0.720				
		EVN5	0.834				
		EVN6	0.695				
		EVN7	0.769				
	ECO			0.858	0.785	0.774	0.606

		ECO1	0.647				
		ECO3	0.701				
		ECO4	0.911				
		ECO5	0.826				

*Source: Author's processing from Smart PLS 3 software*

Table 4 Test of discriminant validity- Fornell-Larcker Criterion (Preliminary Testing)

	<b>BCD</b>	<b>BMFS</b>	<b>ECO</b>	<b>ENV</b>	<b>IC</b>	<b>MR</b>	<b>RBV</b>	<b>SOC</b>	<b>SP</b>	<b>VC</b>	<b>VP</b>
<b>BCD</b>	<b>0.964</b>										
<b>BMFS</b>	0.812	<b>0.955</b>									
<b>ECO</b>	0.693	0.568	<b>0.778</b>								
<b>ENV</b>	0.496	0.481	0.570	<b>0.875</b>							
<b>IC</b>	0.796	0.590	0.640	0.457	<b>0.824</b>						
<b>MR</b>	0.413	0.266	0.433	0.365	0.248	<b>0.816</b>					
<b>RBV</b>	0.737	0.750	0.589	0.387	0.588	0.387	<b>0.808</b>				
<b>SOC</b>	0.654	0.834	0.472	0.528	0.464	0.270	0.589	<b>0.859</b>			
<b>SP</b>	0.744	0.749	0.796	0.766	0.623	0.423	0.644	0.785	<b>0.790</b>		
<b>VC</b>	0.724	0.912	0.479	0.336	0.580	0.131	0.674	0.692	0.597	<b>0.778</b>	
<b>VP</b>	0.763	0.835	0.546	0.509	0.495	0.299	0.714	0.837	0.752	0.717	<b>0.853</b>

Source: Author's processing from Smart PLS 3 software

## 4.6 Data collection and preparation

As already explained, the population of interest for the thesis was all SMEs in Ghana, with the targeted group being those located in the Greater Accra Region of the country. Considering their number and specific location, it became prudent to work with their Associations. This strategy ensured that all identified SMEs were provided with the opportunity to join in the survey. It also made it easier and faster to distribute the instrument to the group. Even though the entire group was targeted, an apriori sample size of a minimum of 200 was desirable for the thesis.

The researcher introduced herself and her research to the Ghana National Chamber of Commerce and Industry, the National Board for Small-Scale Industries, and the Association of Ghana Industries. Their role was primarily to link the researcher to credible SMEs since it was impossible for the researcher to do this, especially considering their numbers, locations, and dispersion. Besides, there was the risk of these SMEs refusing to participate in the survey had the researcher e-mailed the questionnaires to them directly. By working with the Associations, this risk was minimized. The associations were provided with the link to the self-administered questionnaire to be forwarded to their members.

Even though there are several other business associations, these three were chosen because they are the largest and the most active. Besides, unlike the other associations that deal with specific trades, the membership of these three associations cuts across all occupations and forms of business. Finally, working with them aligned with several other relevant studies with similar methodology. Studies in Ghana that sought to study the private sector typically relied on these associations (Asamoah, 2014; Ahinful, 2022; Dzisi & Oforu, 2014).

The researcher requested the associations to send three reminders after the questionnaires had been emailed to the respondents. The first reminder was sent two weeks after the instruments were initially emailed. The second was sent two weeks after the first reminder, with the last reminder also being sent two weeks after the second. By the end of the sixth week, the total number of responses that had been collected was less than the targeted figure. Additional reminders were sent to the SMEs; by the end of the third month, 238 were received. However, 217 out of the number were deemed useful for the studies. This is because the rest suffered from missing responses, with a few having the same responses for all the items in the instrument; they were unfit for the work. Table 5 provides a summary of the demographics of the responses.

Table 5 Demographics of respondents

<b>Details of respondents</b>		<b>Frequency</b>	<b>Percentages</b>
<b>Gender</b>	Male	113	52.07
	Female	104	47.93
<b>Age</b>	Less than 20 years	6	2.76
	20-25 years	44	20.28
	26-30 years	65	29.95
	31-35 years	80	36.87
	36-40years	8	3.69
	Above 40years	14	6.45
<b>Educational Level</b>	Diploma	43	19.82
	University Degree	127	58.52
	Post-graduate Degree	47	21.66
<b>Position</b>	Manager	163	75.12
	Owner Manager	54	24.88
<b>Level</b>	Lower Level	36	16.59
	Middle Level	85	39.17
	Senior Level	96	44.24
<b>Years of Experience</b>	Less than a year	21	9.68
	1-5 years	79	36.40
	6-10 years	49	22.58
	11-15 years	20	9.22
	20-25 years	28	12.90
	Above 25 years	20	9.22
<b>Nature of Business</b>	Agriculture	8	3.69
	Manufacturing/ Production	48	22.12
	Service	68	31.33
	Trading	93	42.86
<b>Age of business</b>	1-5 years	62	28.57
	6-10 years	35	16.13
	11-15 years	50	23.04
	16-20 years	24	11.06
	More than 20 years	46	21.20
<b>Size of SME</b>	Large (more than 100 employees)	31	14.29
	Medium (31-100 employees)	50	23.04

	Small (6-30 employees)	136	62.67
<b>Target Market</b>	Business Market	77	35.48
	Consumer Markets	116	53.46
	Government Markets	24	11.06
<b>Interest in sustainability</b>	Yes	192	88.48
	No	25	11.52

*Source: Author's processing from Microsoft Excel software*

From the table, the 217 respondents being, 113 (52.07%) men and 104 (47.93%) women responded to the instrument. These were either managers or owner-managers, with over 80% having a university education. 90% of the managers were between the ages of 20 years and 40 years, with just under 9 percent falling outside that bracket. There were 31 (14.29%) firms with employees above 100, 50 (23.04%) with employees from 31-100, and 136 (62.67%) with employees from 6-30, with each of them operating in agriculture, manufacturing, service, and trade. Finally, the SMEs could be classified as well-established because about 70% had been operating for over five years.

#### **4.7 Common method variance**

The issue of common method bias is widely discussed in research of this nature. The argument for CMB becomes relevant when data on the study variables are collected from the same source, i.e., from the same respondents (Kock, Berbekova, & Assaf, 2021). The phenomenon is defined by Mackenzie, Lee, & Podsakoff (2003, p.879) as “variance attributable to the measurement method rather than to the constructs being measured.” For most researchers, checking the research's quality and rigour is essential. However, the argument for this “problem” is quite polarised since some researchers downplay its effect on empirical inquiry. Jibril et al. (2020) argue that it is nearly impossible for empirical investigations that feature mediation analysis to suffer from CMB since respondents may be unable to manipulate such relationships mentally. Besides, Kock, Berbekova, and Assaf (2021) provided evidence that CMB was highly under-reported in three leading tourism journals, with the highest reporting rate being 16.6% in the journal *Tourism Management*. This includes proof that CMB may not be as crucial as its being painted. Nonetheless, the thesis made some provisions for CMV based on existing practices.

The thesis employed some strategies to ensure that the incidence of CMB is eliminated with the help of some procedural controls. These include providing clear instructions on how to fill out the instrument, assuring respondents' anonymity, informing respondents

that all responses were acceptable and hence, there was no right or wrong answer, masking the relationships among the variable and the variables themselves, and ensuring that the items were concise (Kock, Berbekova, & Assaf, 2021; Podsaff et al., 20003; 2012). The variance inflation factor (VIF) was also calculated to check this anomaly. All the figures were less than five, as suggested in the extant literature by Gareth, Daniela, Trevor, and Robert (2013) and Menard (2002). Altogether, considering the arguments for and against the relevance of CMB and all the steps that have been taken in the thesis (procedural and statistical), it can be concluded that CMB has been sufficiently and adequately dealt with in the study in both the pre and post data collection phases of the work.

## **5 EMPIRICAL RESULTS**

### **5.1 Data analysis**

Primary data was collected, cleaned, coded, and converted into a form appropriate for statistical analysis. This was achieved with the aid of Microsoft Excel, where the raw data was carefully entered to ensure that the responses from the sample were captured as accurately as possible. Here the data was coded into a form appropriate for Smart PLS (Ringle, Wende, & Becker, 2015). PLS-SEM is chosen because of its ability to handle complex models (Chatterjee et al., 2021). Additionally, Shackman (2013) identifies other reasons that make using PLS-SEM appropriate. These are the ability to use it when dealing with exploratory studies. Even though this thesis is purely explanatory, it has exploratory aspects as the model under investigation is novel. Currently, no study has combined the variables of this study in the way the thesis was done: two, PLS-SEM's usefulness when dealing with small samples. The sample for the survey comprised managers and owner-managers of SMEs in the study area. It can be argued that this could make up a large sample size. However, the reality is that it is impossible to get a large number of respondents from this group. Besides, compared to other target populations like customers and employees, this group size is relatively in the minority. Third, PLS-SEM's usefulness when normality assumptions cannot be made. For the current study, the premise of normality could not be made, making employing PLS-SEM statistically prudent. As has been explained, all these risks are associated with the research and hence the choice of analysis.

The second part of the analysis for this work was achieved using Microsoft Excel, where aspects of the data was analysed into frequencies and graphs for clearer understanding. This was necessary because the nature of the responses did not require the use of the Smart-PLS software. This dealt explicitly with four items in the last part of the instrument.



## 5.2 Test for reliability

The statistical analysis commenced with assessing the measurement model for reliability (Hair Jr, Howard, & Nitzl, 2020; G. F. Khan et al., 2019; Shmueli et al., 2019). Reliability in research explains how the instrument can accurately measure the constructs under study. Two key issues are involved in reliability: the ability to accurately measure the construct in the present study and the ability to measure it in future studies and other settings (Schrepp, 2020; Tavakol & Denmick, 2011). To ascertain this, it was necessary to report statistics such as the Cronbach Alpha, Composite reliability, and average variance extracted. Because of limitations associated with Cronbach alpha, composite reliability is preferred (Hair et al. 2017) when assessing internal consistency and reliability. The threshold values for determining a good model are  $> 0.70$  for Cronbach alpha and  $>0.60$  for composite reliability (Bagozzi & Yi 2012). As for the average variance extracted (AVE), the generally accepted threshold value is .50, even though others argue that a lower figure is acceptable (Fornell & Larcker, 1981; Hair, Babin, & Anderson, 2010).

Table 6 reports that all the figures were above the suggested benchmark values. BMFS recorded overall Cronbach Alpha, RHO, Composite Reliability, and AVE loadings of 0.871, 0.902, 0.902, and 0.584, respectively. Additionally, its indicators reported 0.881, 0.884, 0.914, and 0.680 for VP and 0.847, 0.848, 0.908, and 0.767 for VC. Besides they each loaded significantly as follows: VP1(0.733), VP2(0.845), VP3(0.814), VP4(0.877), VP5(0.847), VC1(0.839), VC2(0.873), and VC3(0.913). Likewise, the construct MR also reported Cronbach Alpha (0.807), RHO (0.826), CR (0.874), and AVE (0.636); additionally, the individual loadings ranged between 0.766, 0.722, 0.792, and 0.900. BCD and SP and their indicators also loaded significantly on all the measures. From the table, it can be concluded that the measurement model meets all the reliability criteria, as scholars suggested.

Table 6 Construct reliability for measurement model (Actual)

<b>Variables</b>	<b>Sub-Var.</b>	<b>Proxy</b>	<b>Loadings</b>	<b>Cronbach Alpha</b>	<b>RHO</b>	<b>Composite Reliability</b>	<b>AVE</b>
BMFS				0.871	0.902	0.902	0.584
	VP			0.881	0.883	0.914	0.680
		VP1	0.736				
		VP2	0.848				
		VP3	0.816				
		VP4	0.875				

		VP5	0.841				
	VC			0.847	0.849	0.908	0.767
		VC1	0.828				
		VC2	0.881				
		VC3	0.916				
MR				0.807	0.826	0.874	0.636
		MR1	0.766				
		MR2	0.722				
		MR3	0.793				
		MR4	0.900				
BCD				0.813	0.828	0.860	0.599
	IC			0.709	0.709	0.836	0.630
		IC1	0.824				
		IC2	0.772				
		IC3	0.782				
	RBV			0.813	0.825	0.877	0.641
		RBV1	0.817				
		RBV2	0.857				
		RBV3	0.766				
		RBV4	0.754				
SP				0.832	0.902	0.846	0.589
	SOC			0.786	0.789	0.875	0.701
		SOC1	0.882				
		SOC2	0.815				
		SOC3	0.812				
	EVN			0.906	0.961	0.932	0.773
		EVN1	0.891				
		EVN2	0.876				
		EVN3	0.880				
		EVN4	0.870				
	ECO			0.846	0.856	0.897	0.686
		ECO1	0.724				

		ECO2	0.852				
		ECO3	0.864				
		ECO4	0.864				

*Source: Author's processing from Smart PLS 3 software*

### 5.3 Test for discriminant validity

In addition to ensuring the reliability of the instrument, the test for discriminant validity was ascertained; this is another way to ensure statistical rigor in a researcher of this nature (Anderson & Gerbing, 1988; Fornell & Larcker, 1981). Discriminant validity is a means to ensure that the constructs under study are not highly related. In simple terms, the items developed to measure each construct measure just those constructs without measuring the other constructs in the model. In other words, discriminant validity indicates the independence of each item that measures the constructs, ensuring that they are 'discriminated' against each other or that they measure the construct in unique ways. Discriminant validity is helpful because it shows that the research items are not the same questions in different ways. Hence it provides varied opinions in the form of responses about the construct under study. Additionally, it indicates that respondents are very clear about what the items are asking; there is no confusion regarding the questionnaire items.

To establish this, the Fornell-Larcker cross-loading criterion (Fornell & Larcker, 1981) and Heteriotriat-Monotrait (HTMT) Ratio (Henseler et al., 2015) were employed. These criteria are the most popular means of determining discriminant validity, with most studies published in renowned journals using them. According to the Fornell-Larcker criterion, the square root of the AVE of a latent variable should be higher than the correlation between that latent variable and other latent variables in the study (Fornell & Larcker, 1981). The AVE is typically shown diagonally in the Fornell-Larcker table, and according to the criterion, it should be the highest figure in its row and column. Meanwhile, the HTMT proposed by Henseler, Ringle, and Sarstedt (2015) is a method involving the calculation of a ratio from the between-trait(monotrait) correlations and the within-trait (heterotrait) correlations of the constructs in the study. In simple terms, HTMT is a ratio derived from a construct's average correlations against its average correlations with other constructs in the study. The criterion for this modern method is that HTMT should not be more than 0.9 or close to one.

The output from the data showed that these conditions had been satisfied. In the case of the Fornell- Larcker criterion, the results indicate that all the values of interest are higher than the other values. The values of interest representing the square-roots of the AVEs of the latent variables are highlighted and aligned diagonally in the output table. These figures are higher than those in their respective rows and columns. Also, the

HTMT output shows that the figures do not exceed 0.9, as Henseler et al. suggested (2014). It was concluded that it meets the conditions for ensuring discriminant validity. The results are displayed in Tables 7 and 8.

Table 7 Test for discriminant validity- Fornell-Larcker Criterion (Actual)

	<b>BCD</b>	<b>BMFS</b>	<b>ECO</b>	<b>ENV</b>	<b>IC</b>	<b>MR</b>	<b>RBV</b>	<b>SOC</b>	<b>SP</b>	<b>VC</b>	<b>VP</b>
<b>BCD</b>	<b>0.774</b>										
<b>BMFS</b>	0.572	<b>0.764</b>									
<b>ECO</b>	0.715	0.582	<b>0.828</b>								
<b>ENV</b>	0.039	0.007	0.046	<b>0.879</b>							
<b>IC</b>	0.767	0.450	0.622	0.040	<b>0.794</b>						
<b>MR</b>	0.629	0.565	0.753	0.028	0.452	<b>0.797</b>					
<b>RBV</b>	0.704	0.450	0.754	0.026	0.500	0.521	<b>0.800</b>				
<b>SOC</b>	0.684	0.652	0.761	0.011	0.551	0.743	0.527	<b>0.837</b>			
<b>SP</b>	0.713	0.667	0.737	0.085	0.619	0.702	0.677	0.720	<b>0.767</b>		
<b>VC</b>	0.456	0.757	0.507	0.032	0.395	0.571	0.323	0.636	0.603	<b>0.876</b>	
<b>VP</b>	0.558	0.746	0.539	-0.017	0.418	0.482	0.462	0.565	0.606	0.645	<b>0.825</b>

*Source: Author's processing from Smart PLS 3 software*

Table 8 Test for discriminant validity-Heteriotriat-Monotrait (HTMT) Ratio

	<b>BCD</b>	<b>BMFS</b>	<b>ECO</b>	<b>ENV</b>	<b>IC</b>	<b>MR</b>	<b>RBV</b>	<b>SOC</b>	<b>SP</b>	<b>VC</b>
<b>BMFS</b>	0.668									
<b>ECO</b>	0.709	0.672								
<b>ENV</b>	0.059	0.800	0.055							
<b>IC</b>	0.564	0.558	0.801	0.070						
<b>MR</b>	0.766	0.658	0.612	0.050	0.593					
<b>RBV</b>	0.690	0.519	0.888	0.035	0.644	0.616				
<b>SOC</b>	0.845	0.781	0.725	0.038	0.727	0.721	0.636			
<b>SP</b>	0.858	0.705	0.566	0.608	0.709	0.851	0.694	0.855		
<b>VC</b>	0.559	0.694	0.615	0.064	0.509	0.688	0.388	0.779	0.649	
<b>VP</b>	0.658	0.060	0.627	0.042	0.522	0.565	0.541	0.683	0.633	0.745

*Source: Author's processing from Smart PLS 3 software*

## 5.4 Hypotheses testing using partial least square-structural equation modelling (PLS-SEM)

Following the preliminary analyses described above, the structural model was assessed. Assessing a structural model involves determining the model's predictive ability in a particular study. Specifically, it demonstrates whether the exogenous variables can predict the endogenous variables. The ultimate goal for assessing the structural model is to determine whether or not the hypotheses would be supported. As already indicated, hypotheses form the core of any quantitative research since it is the basis for the work. Similarly, the hypotheses for the theses need to be tested.

The hypotheses were developed based on an extensive literature review of the constructs. This involved a careful examination of related theories and empirical and conceptual arguments. A research instrument was subsequently developed by adopting and adapting existing scales on the constructs. In some instances, it became necessary to develop some of the constructs for the theses since these were lacking in the related literature; these scales were used to collect data for the work. The instrument and data were subjected to rigorous statistical analyses to ensure reliability and validity. The research could only proceed with the hypotheses testing after meticulously adhering to the steps stipulated by scholars (Bagozzi & Yi, 1988; Chen, Kuo, Liu, & Wong, 2013).

The data and hypotheses testing were done with the aid of **SmartPLS 3** software; with this software, the partial least square-structural equation modelling was achieved. The PLS-SEM algorithm was based on the default settings with the  $t$  statistic and the significant level for each path in the model being:  $t > 1.96$  and  $p \leq 0.05$ .

In assessing the structural model, the thesis implemented four critical steps. These involved 1. assessing collinearity issues. Collinearity issues in the structural model determine whether two or more variables measure the same attribute (Echambadi & Hess, 2007). Here, it is vital that the different variables in the model uniquely measure other characteristics; else, it will simply be a model that consists of the same attribute predicting itself. It is vital to remember that performing a test for reliability and validity does not satisfy the condition for assessing collinearity since the former deals with the measurement model while the latter is for the structural model (Kock & Lynn, 2012). The threshold value for assessing collinearity in a model is using the VIF statistic. Here the rule is that the VIF for each construct should not be more than five (Cassel, Hackl, & Westlund, 1999). In a situation with more than five, it can be concluded that the structural model suffers from collinearity issues.

In the case of the thesis, the VIF for each construct was less than 5, with the highest being 3.3. This indicates that the measurement model does not suffer from collinearity issues. This result is presented in Table 9.

Table 9 Factor loadings and multicollinearity (Variance Inflation Factor)

<b>Variables</b>	<b>Proxy</b>	<b>Loadings</b>	<b>VIF</b>
BMfS			
	VP1	0.736	1.645
	VP2	0.848	2.550
	VP3	0.816	2.483
	VP4	0.875	3.326
	VP5	0.841	2.855
	VC1	0.828	1.712
	VC2	0.881	2.411
	VC3	0.916	2.834
MR	MR1	0.766	1.583
	MR2	0.722	1.476
	MR3	0.793	2.432
	MR4	0.900	3.033
BCD			
	IC1	0.824	1.574
	IC2	0.772	1.235
	IC3	0.782	1.523
	RBV1	0.817	1.897
	RBV2	0.857	1.913
	RBV3	0.766	1.734
	RBV4	0.754	1.479
SP			
	SOC1	0.882	1.551
	SOC2	0.815	1.639
	SOC3	0.812	1.790
	EVN1	0.891	3.041
	EVN2	0.876	2.111
	EVN3	0.880	3.881
	EVN4	0.870	3.573



	ECO1	0.724	1.474
	ECO2	0.852	2.205
	ECO3	0.864	2.185
	ECO4	0.864	2.237

*Source: Author's processing from Smart PLS 3 software*

2. The significance and relevance of the structural model must also be determined as the next step. This is when the actual testing of the hypotheses where the relationships are tested to determine whether they are significant or not hence acceptance or rejection. Some tests are used for the decision. They are the t statistic, p-value, and confidence interval. The rule of thumb is that the t statistic should be more than 1.96, with the p-value being less or equal to 0.05 (Hartman, Kros, & Waske, 2018). Finally, the confidence intervals also indicate whether to accept or reject the hypothesis.

The thesis presented two broad relationships: direct effects and indirect effects.

***Direct Effect:***

The direct effect deals with the relationships between the antecedent and dependent variables. These were expressed in the structural model as follows:

**VC -> SP** (Value creation and SME Sustainability Performance)

**VP -> SP** (Value proposition and SME Sustainability Performance)

**BMFS -> SP** (BMfS and SME sustainability performance)

**IC -> SP** (Innovative Capabilities and SME Sustainability Performance)

**RBV -> SP** (reputation and brand value and SME sustainability performance)

**BCD -> SP** (Business Case Drivers and SME Sustainability Performance)

The results of the PLS bootstrapping indicate six hypotheses from the direct relationships were accepted. The decision was based on the t statistic, p values, and confidence intervals. The relationships that were accepted are VC -> SP, VP -> SP, BMFS -> SP. These hypotheses were all statistically significant at the given thresholds (t-value > 1.96 (or p-value <0.05). However, the remaining three were not; H3a RBV -> SP (t value=0.814; p value=0.416), H3b IC -> SP (t value=0.793; p value=0.426), H3c BCD -> SP (t value=0.803; p value=0.422). Table 10 provides full details of the output.

## **Indirect effect**

The subsequent analysis was for the indirect relationship in the structural model. A moderator and mediator were imposed on the direct relationship to ascertain the conditions that could affect the direct relationship. These were expressed as follows:

**MR\*BMFS -> SP** (Market readiness moderates the relationship between BMfS and SME Sustainability Performance)

**BMFS -> BCD -> SP** (Business Case Drivers mediate the relationship between BMfS and SME Sustainability Performance)

The outcome from the analyses indicates that the moderation effect was possible; however, this did not hold in the mediation analysis case. Using the same basis for the direct impact, H2: MR\*BMFS -> SP (t value=2.869; p value=0.004). A look at the p-value gives an idea of the impact of the moderator; however, because the t-value and the confidence interval (Bias=0.000; 2.5%=0.001; 97.5%=0.007) satisfy the conditions for accepting the hypothesis, this was also accepted. The situation was different for the mediator because all the indices did not hold up. For H3d: BMFS -> BCD -> SP (t value=0.804; p value=0.422), the t value was lower than 1.96; similarly, the p-value was higher than 0.05, so the decision was to reject. The full results are presented in Table 11. Additionally, the estimated research model is shown in Figure 6.

Table 10 Path analyses of the structural model (Direct relationship)

Hypotheses	Paths	Original Sample ( $\beta$ )	Sample Mean (M)	Standard Deviation STDEV	T-Values	p Values	Confidence Interval BC			Decision
							Bias	2.5%	97.5%	
H1a	<b>VP -&gt; SP</b>	0.019	0.019	0.004	5.077	0.000	0.000	0.011	0.026	Accept
H1b	<b>VC -&gt; SP</b>	0.012	0.012	0.002	5.302	0.000	0.000	0.007	0.017	Accept
H1c	<b>BMfS -&gt; SP</b>	0.029	0.029	0.006	5.068	0.000	-0.001	0.017	0.039	Accept
H3a	<b>RBV -&gt; SP</b>	-0.005	- 0.004	0.006	0.793	0.428	0.000	-0.016	0.005	Reject
H3b	<b>IC-&gt; SP</b>	-0.003	- 0.003	0.004	0.814	0.416	0.000	0.011	0.004	Reject
H3c	<b>BCD -&gt; SP</b>	-0.007	- 0.006	0.009	0.803	0.422	0.000	-0.025	0.008	Reject

Source: Author's processing from Smart PLS 3 software

Table 11 Path analyses of the structural model (Indirect relationship)

Hypotheses	Paths	Original Sample ( $\beta$ )	Sample Mean (M)	Standard Deviation STDEV	T-Values	p Values	Confidence Interval BC			Decision
							Bias	2.5%	97.5%	
H2	<b>MR*BMFS -&gt; SP</b>	0.004	0.004	0.001	2.869	0.004	0.000	0.001	0.007	Accept
H3d	<b>BMFS -&gt; BCD -&gt; SP</b>	-0.001	-0.001	0.001	0.804	0.422	0.000	-0.002	0.001	Reject

*Source: Author's processing from Smart PLS 3 software*

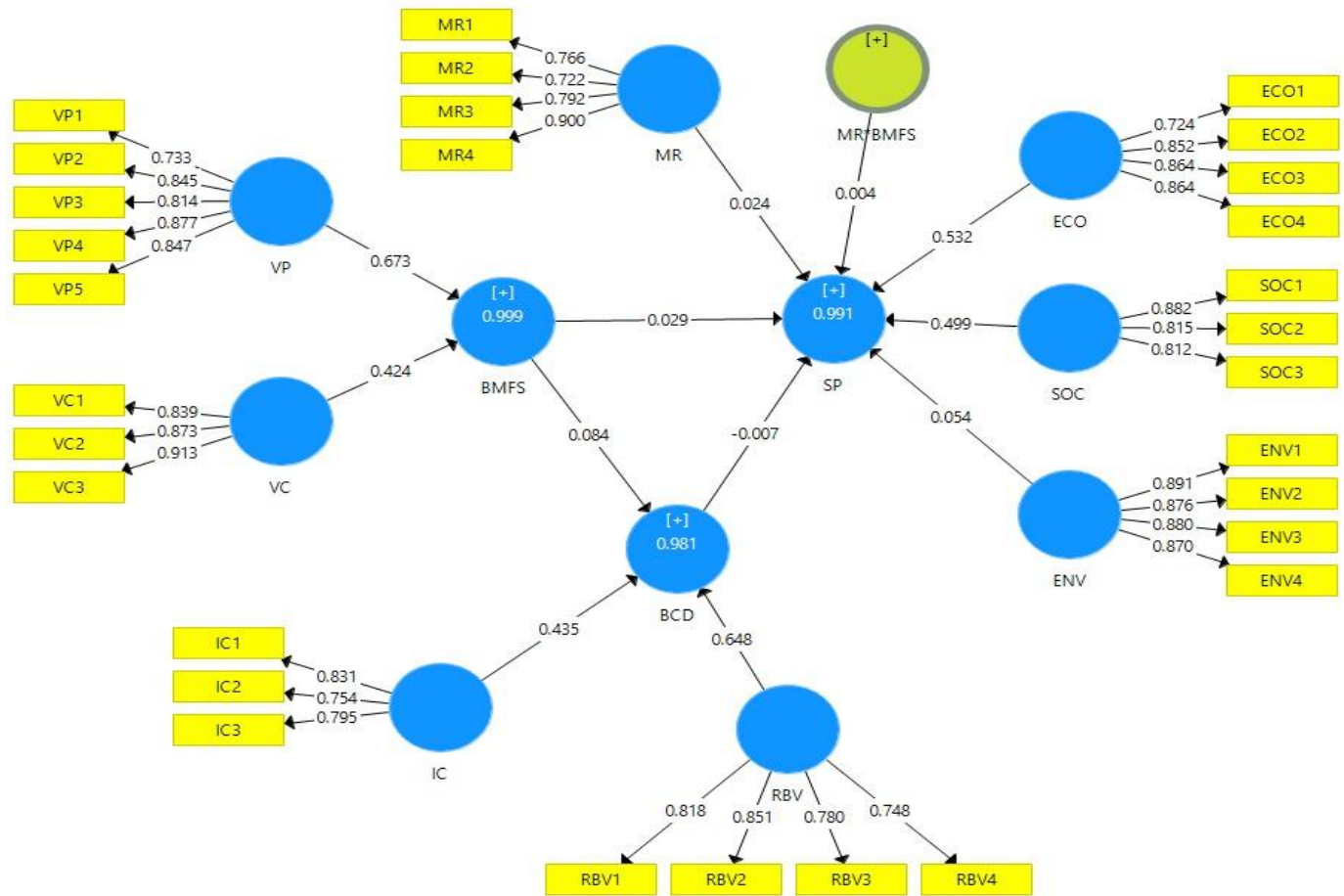


Figure 6: Estimated research model

Source: Author's processing from Smart PLS 3 software

3. The next important step in the PLS analysis discusses the  $R^2$  (or the coefficient of determination). The  $R^2$  represents the proportion of change indicated in the dependent variable as a result of the impact of the independent variable. According to Fernando (2020), it means a statistical measure showing the change in the dependent variable that is explained due to the impact of the independent variable. The rule of thumb in  $R^2$  according to Hair et al. (2011; 2013), is as follows:

$$R^2 = 0.20 \text{ (Weak)}$$

$$R^2 = 0.50 \text{ (Moderate)}$$

$$R^2 = 0.75 \text{ (Substantial)}$$

The thesis PLS bootstrapping produced  $R^2$ s for each relevant variable to determine the extent of the impact of the independent (exogenous) variables. It checked how all the variables affected SMEs' sustainability performance. From the findings, the independent variables substantially impacted the dependent variables. They all fell within the moderate category indicate that the model has predictive power. The results are shown in Table 12.

Table 12 Coefficient of determination

<b>Construct</b>	<b>R Squared</b>	<b>R Squared Adjusted</b>
<b>BCD</b>	0.451	0.430
<b>SP</b>	0.524	0.513

*Source: Author's processing from Smart pls3 software*

4. This work's final statistic of interest is the  $f^2$  (effect size). This figure represents a change when an exogenous variable is removed from the model. In simple terms, it determines the differences in the impact of the independent variables on the dependent variable. It could also be understood that it essentially helps to ascertain the exact contribution of change in the structural model by the independent variable. The rule of thumb for  $f^2$  according to Cohen (1988), is as follows:

$$0.02 \leq f^2 < 0.15 \text{ (Small)}$$

$$0.15 \leq f^2 < 0.35 \text{ (Medium)}$$

$$f^2 \geq 0.35 \text{ (Large)}$$



The results based on Cohen’s scale prove that the relationships were quite significant, falling within the moderate to strong category. There was an unexpected outcome with the moderating effect. Even though the decision was to accept the hypothesis, due to its t and p values, the  $f^2$  proved that the impact was very minimal. It had an  $f^2$  of 0.006 which is far less than 0.02 indicating a weak effect size. The results for all the paths are displayed in Table 13.

Table 13 Output of the effect sizes

<b>Effects</b>	<b>Original Sample (<math>\beta</math>)</b>	<b>Indirect Effects</b>	<b>Total Effects</b>	<b>Cohen’s Effect</b>
<b>VP -&gt; SP</b>	0.019		0.019	0.158
<b>VC -&gt; SP</b>	0.012		0.012	0.251
<b>BMfS -&gt; SP</b>	0.029		0.029	0.470
<b>MR*BMfS-&gt; SP</b>		0.004	0.004	0.004
<b>RBV -&gt; SP</b>	-0.005		-0.005	0.015
<b>IC-&gt; SP</b>	-0.003		-0.003	0.012
<b>BCD -&gt; SP</b>	-0.007		-0.007	0.001
<b>BMfS -&gt; BCD -&gt; SP</b>		-0.001	-0.001	

*Source: Author’s processing from Smart PLS 3 software*

### **5.5 Presentation of Analysis of perceived challenges associated with BMfS**

The last section of the instrument highlighted responses on challenges that SMEs perceived are associated with BMfS and the implementation of sustainability goals in general. Four items in this section discussed the cost of implementing sustainability models, re-training employees for BMfS, issues with complicated stakeholder relationships, and BMfS competing with business goals. These responses were measured on a scale of 1 to 7, with 1 being least in agreement, 2 somehow in agreement, 3 in



agreement, 4 somehow high in agreement, 5 high in agreement, 6 very high in agreement, and 7 highest in agreement. These outputs were processed using Microsoft Excel. They are presented as Tables and Figures as follows.

Table 14 Responses to challenge 1

<b>Responses</b>	<b>Number of Respondent</b>	<b>Percentage (%)</b>
1	5	2.30
2	9	4.15
3	18	8.29
4	10	4.56
5	14	6.45
6	68	31.34
7	93	42.86
<b>Total</b>	<b>217</b>	<b>100</b>

*Source: Author’s processing from Microsoft Excel software*



Figure 7: Responses to challenge 1

*Source: Author’s processing from Microsoft Excel software*

The first question was the extent to which the SMEs thought that BMfS was expensive. The output indicates that 14 respondents perceived that such business models might not be costly. However, 203 (93.55%) believed they could be expensive, with responses (18 people 8.29%, ten people 4.56%, 14 people 6.45%, 68 people 31.34% and 93 people 42.86%) ranging from “in agreement” to “highest in agreement” regarding the cost associated with sustainable business models. This is presented in Table 14 and Figure 7.

Table 15 Responses to challenge 2

Responses	Number of Respondents	Percentage (%)
1	-	-
2	4	1.84
3	14	6.45
4	19	8.76
5	15	6.91
6	73	33.64
7	92	42.40
Total	217	100

*Source: Author’s processing from Microsoft Excel software*

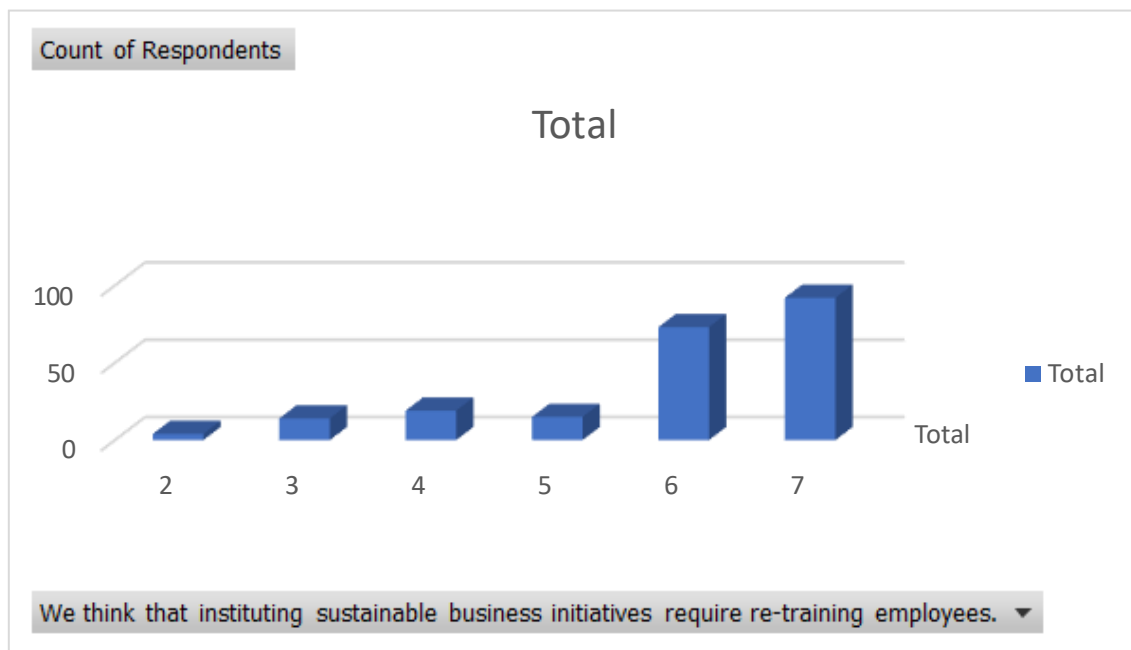


Figure 8: Response to challenge 2

*Source: Author’s processing from Microsoft Excel software*

The second question was whether the owner-managers/managers perceived that sustainable business initiatives required re-training of their employees. Similarly, a considerable section of the respondent, numbering 199 representing about 91.71% (4 people 1.84%, 14 people 6.45%, 19 people 8.76%, 15 people 6.91%, 73 people 33.64%, and 92 people 42.40%) supposed it was necessary. Their responses were from the category “in agreement” to “highest in agreement.” However, only 18 people (8.29%) did not agree with this assertion. They indicated either “least in agreement” or “somehow in agreement.” This is shown in Table 15 and Figure 8.

Table 16 Responses to challenge 3

Responses	Number of Respondents	Percentage (%)
1	5	2.30
2	15	6.91
3	4	1.84
4	15	6.91
5	44	20.28
6	54	24.88
7	81	37.33
Total	217	100

Source: Author’s processing from Microsoft Excel software

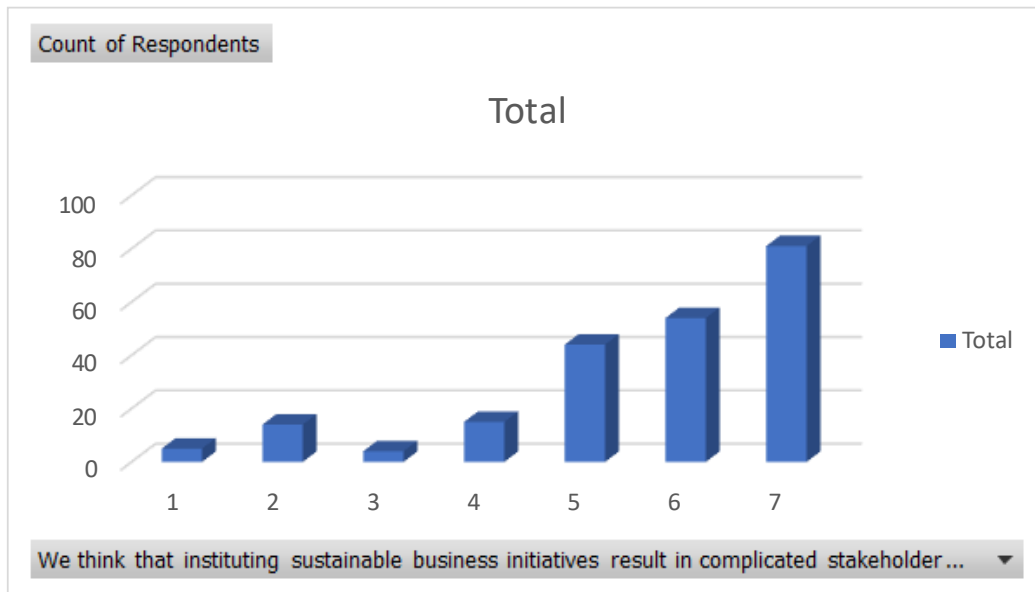


Figure 9: Response to challenge 3

Source: Author’s processing from Microsoft Excel software

Third, the issue of BMfS or sustainability initiatives resulting in complicated stakeholder relationships was asked. The results reflected a similar trend where 198 (91.24%) respondents agreed that stakeholder relationships could become complex with sustainable business models. Only a few totalling 19 (8.76%), did not agree to this challenge. Table 16 and Figure 9 show the results.

Table 17 Responses to challenge 4

Responses	Number of Respondents	Percentage (%)
1	10	4.61
2	8	3.69
3	4	1.84
4	5	2.30
5	25	11.52
6	60	27.65
7	105	48.39
Total	217	100

Source: Author's processing from Microsoft Excel software

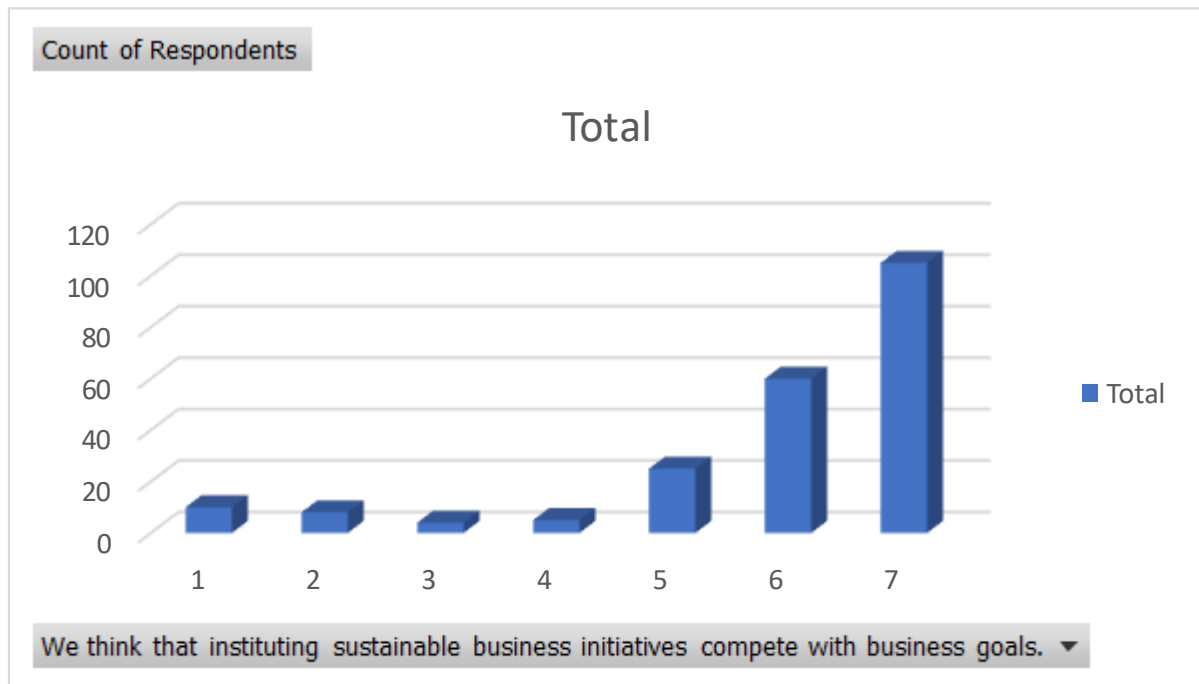


Figure 10: Response to challenge 4

Source: Author's processing from Microsoft Excel software

The fourth questionnaire item in this category was on whether sustainability issues could compete with business goals. The respondents affirmatively indicated so, with 198 (91.24%) agreeing with this. Four (1.84%) people agreed, five (2.30%) indicated somehow in agreement, 25(11.52%) said high in agreement, 60 (27.65%) expressed very high in agreement, and 105 (48.39%) the majority chose highest in agreement. Conversely,18 (8.30%) respondents also assumed that sustainability issues might not affect business. The results are presented in Table 17 and Fig 10.

## **6 DISCUSSION OF RESEARCH FINDINGS**

The work examined the relationship between BMfS, firm sustainability performance, market readiness, and BCD in a developing economy. Some works have argued that for firms to reach sustainability, they must develop a business model to attain sustainability. This is dubbed business models for sustainability (Abdelkafi & Tauscher, 2015; Schaltegger et al., 2016; Stubbs & Cocklin, 2008). Relying on theories such as natural resource-based theory, sustainability-oriented theory, stakeholder theory, and theory of planned behaviour, the arguments for the foundation of the thesis were birthed. The first three theories formed the basis for the direct relationship between BMfS and SME SP. Additionally, considering that proponents of BMfS also suggest BCD as mediators, these were incorporated in the thesis. Finally, the theory of planned behaviour gave impetus for the inclusion of market readiness in the model.

The results of the thesis indicate that consistent with the proposed hypotheses and in the context of this work, i.e., business owners and managers of SMEs operating in a developing country setting perceived that BMfS on its own impacts SME sustainability performance. The result further shows that it is not vital to have drivers such as reputation and brand value, and innovative capabilities. The work proved that market readiness encourages the relationship between BMfS and sustainability. A complete discussion of the results is presented in this section. As a guide, Table 18 provides a summary of the results. The table shows the hypotheses tested for the study along with the outcome of the tests. Eight hypotheses were tested; four were significant, leading to them being accepted, while four were not; hence, they were rejected. These are discussed in line with the main research questions in the thesis.

Table 18 Summary of hypotheses testing

<b>Effect</b>	<b>Hypotheses</b>	<b>Sign (+/-)</b>	<b>Remarks</b>
Direct	VP -> SP	+	Significant
Direct	VC -> SP	+	Significant
Direct	BMFS -> SP	+	Significant
Indirect	MR*BMFS AND SP	+	Significant
Direct	RBV -> SP	-	Not- Significant
Direct	IC -> SP	-	Not- Significant
Direct	BCD -> SP	-	Not- Significant
Indirect	BMFS -> BCD -> SP	-	Not- Significant

*Source: Author's processing from Smart pls3 software*

*RQ1. What is the relationship between BMfS and firms' sustainability performance?*

The basis for this question was to ascertain the veracity of the argument that BMfS impacts sustainable business performance. As already explained, several sustainability researchers have argued that current sustainability strategies are ineffective at achieving total sustainability. The suggestion is for sustainable business models, or what this thesis has consistently referred to as BMfS. The overall aim of the thesis was to assess the perception of SMEs regarding the impact of BMfS on SP. Five hypotheses were proposed for this question; these sought to determine the direct relationship between the two main variables suggested by existing studies. It is especially noteworthy that the thesis additionally focused on the relationship between the sub-variables of the main

variables. Considering the evidence in extant literature for the two variables, the hypotheses for answering the objective were stated in the positive. Using the indicators of BMfS as given in the literature, the thesis argued that:

*H1a: There is a direct relationship between value propositions and SMEs' sustainability performance.*

*H1b: There is a direct relationship between value creation and SMEs' sustainability performance.*

*H1c: There is a direct relationship between overall BMfS and SMEs' sustainability performance.*

Since extant literature measures BMfS using VP and VC, it was necessary to incorporate these into the empirical study. The first two hypotheses were formulated for this purpose; this was necessary if further arguments could be made using the existing literature. The arguments in this work was that firms must build BMfS by investing in VP and VC activities, such as working with their stakeholders to develop products that will satisfy and address their needs, support their stakeholders all through the value creation process and offer options that are better than what the competition provides (Bocken, 2014; Clauss, 2017; Dijkman et al., 2015; Ulaga, 2003). The relevance of VP and VC is further deepened by arguments from Baldassarre et al. (2017), who claim that VP is the core of business models. The findings suggest that firms may not implement BMfS without examining their VP and VC activities, as these may provide the foundation for achieving sustainability performance.

The work highlights the need for SMEs to critically examine the role of VP and VC in attaining sustainability. The findings support the argument that sustainability performance can best be achieved when fully incorporated into firms' activities. This position draws attention to the role of value chain analysis in organisational performance (Porter, 1985), which requires that organisational performance can only be achieved when the entire value chain is examined. This argument can be juxtaposed with sustainability as well. This means that firms interested in attaining sustainability may need to incorporate sustainability strategies into their value offers for their current and prospective markets. Isolating it as a separate function and introducing programs as it is done in CSR and corporate sustainability may not produce the expected results as already suggested by some researchers.

The final hypothesis on the relationship between BMfS and SP also proved positive and significant. Considering that the first four had produced positive outcomes, this was unsurprising. The respondents perceived that a business was more likely to succeed if it developed business models focused on sustainability. The findings support the conceptual arguments that have been on the subject. It further supports the empirical works that were earlier discussed in this work. This result is quite interesting because the studies discussed dealt with businesses with different characteristics from those used in the thesis. Besides, the thesis also involved firms in a developing economy. This gives the impression that irrespective of the kind, nature, background, and place of the business, managers and owner-managers may need to develop sustainable business models if they intend to work towards sustainability.

Regarding the first research question: what is the relationship between BMfS and SME sustainability? The study concludes there is a positive relationship between BMfS and sustainability performance. This positive relationship includes the main variables and the sub-variables of the independent variable. Hence, BMfS and all its components, i.e., VP and VC, affect SME sustainability performance even in a developing country like Ghana.

*RQ2. What is the effect of perceived market readiness on the relationship between BMfS and SMEs' sustainability?*

The thesis treated perceived market readiness as a moderator. The moderator's purpose was to determine how an external factor affects the strength of the relationship between the main variables. To answer this question, hypothesis *H3*: “*Market readiness moderates the relationship between BMfS and SME sustainability performance,*” was formulated.

To incorporate market readiness into the study, the respondents answered questions on whether customers will buy even if they were offered slightly higher prices, significantly higher prices, and whether low- and medium-income earners will support firms' sustainability efforts. The results from the study show that, in theory, the respondents perceived market readiness as relevant in the BMfS- sustainability discussion. This implies that with the presence of market readiness, the impact of BMfS on SME sustainability is more significant. The simple explanation of the result is that once a firm has interested consumers willing to accept sustainability goals, their sustainable business models will contribute to sustainability performance. It is also possible to argue that the reverse is also true, meaning that when customers are not interested (or ready for) in sustainability issues, it will negatively impact the relationship between sustainability business models and sustainability performance. This outcome is interesting, considering the economic burden of sustainability business models on SMEs.



The outcome highlights the role of stakeholders, particularly customers, in attaining sustainability performance. This outcome is quite like the assertions of Frambach, Fiss, and Ingenbleek (2016) and Heikkurinen and Bonnedahl (2013) on the role of customers in achieving organisational goals and the need for them to be included in such corporate endeavors. Regarding the thesis, stakeholders wield power and interest, as explained in the power/interest grid; hence, they must be managed closely (Mendelow, 1991). This involves engaging them in the decision-making process. Organizations must carefully consider their inputs and concerns in dealing with such influential stakeholders, especially the threats they pose to such organizational goals.

However, market readiness in sustainability performance issues is quite dicey because sustainability goals carry additional costs. They could increase production costs and, ultimately, the cost and price of items. This burden imposed by sustainability models may harm market readiness and cause customers to lose interest in sustainability goals.

Existing literature on pricing explains that business profitability depends on price cost margin (Nanda & Panda, 2018). For most SMEs, their markets expect that they set optimal prices for their offerings. This requires fixing reasonable and affordable market prices (Chen et al., 2019). However, this is almost impossible for SMEs and even more so for SMEs that aim at sustainability goals. Abokyi et al. (2020) report that simplistic pricing mechanisms generate little profit for businesses; hence, adding added costs may result in worse consequences. With sustainability goals imposing additional costs, SMEs may face survival risks. For firms to continue to be operational, they must encourage their markets to appreciate their sustainability efforts so that they can support them by continually patronizing their offerings irrespective of the price. This explains the relevance of market readiness in sustainability performance. It is, therefore, not surprising that even though theoretically, market readiness positively impacted sustainability performs in the study, practically, it did not.

Brockhaus, Fawcett, Knemeyer, & Fawcett (2017) relays similar sentiments on the role markets (or customers) play in sustainability. It reports with other scholars that the great recession shifted the views of the market on sustainability and eroded its interest in it (Hayward et al., 2013). Markets were no longer prepared to invest in sustainability due to the pressures from the economy. Economic realities diminished the value markets placed on sustainability and their support for it. This situation emphasizes the need for markets to be ready and prepared to accept sustainability in theory and practice by continually patronizing offerings that project sustainability goals.

This thesis has exposed the need for organizations to work with relevant stakeholders to achieve their strategic aims regardless of size, location, and goals. Considering that sustainability is vital, firms must prepare their markets to accept it so they that can support the firms. It must be mentioned that the inclusion of market readiness is novel since no study has currently considered it in a model like this.

*RQ3. How do business case drivers impact the relationship between BMfS and SMEs' sustainability performance?*

Another critical aspect of the thesis was the role of the mediating variables. This was to ascertain the mechanism by which the direct relationship could occur. Mediators are necessary so that the theoretical model can replicate real-world conditions (Namazi and Namazi (2016) since direct relationships are not a usual occurrence. The thesis introduced business case drivers as the mediating variables and analysed their contributions to the relationship. According to Schaltegger, Lüdeke-Freund, and Hansen (2012), six business case drivers mediate the relationship between BMfS and sustainability. Two, namely innovative capabilities and reputation and brand value, were selected for this work.

Consistent with how the indicators of BMfS were treated in this work, the indicators of the business case drivers were also tested. There was a total of four hypotheses for this research question. These are listed below:

*H3a: There is a direct relationship between Reputation and Brand Value and SMEs' sustainability performance.*

*H3b: There is a direct relationship between Innovative Capabilities and SMEs' sustainability performance.*

*H3c: There is a direct relationship between Business Case Drivers and SMEs' sustainability performance.*

*H3d: Business Case Drivers mediate the relationship between BMfS and SME sustainability performance.*

The thesis examined the relationship between the mediators' indicators and the dependent variables. Each indicator was tested against the dependent variables to achieve this goal (*H3a-H3c*). The first two hypotheses were for the individual sub-variables, while the last were for the composite, i.e., business case drivers. All three hypotheses were rejected, indicating that business case drivers do not support sustainability performance.

For decades, researchers have argued that sustainability performance will likely occur if firms establish business cases for sustainability. These are some benefits that serve as motivators for engaging in sustainability goals. The basis of the argument is that such drivers mitigate the economic burdens of sustainability goals (Eden, 1994; Lazano, 2013; Schaltegger & Burritt, 2018; Schaltegger et al., 2012; van Marrewijk, 2003). However, the thesis has provided empirical support against such assumptions involving business case drivers.

The final test of business case drivers was based on its role in the relationship between BMfS and sustainability performance. This was done by testing *H3d*. Based on the literature on business case drivers, the thesis stated that overall business case drivers (innovative capabilities, reputation, and brand value) result in BMfS ensuring SME sustainability performance. This position was rejected because the presence of the BCDs did not produce the anticipated results. The respondents perceived that BCDs do not result in achieving or realizing SME sustainability performance.

This finding is consistent with the arguments by Williamson, Lynch-Wood, and Ramsay (2006) on the drivers of sustainability performance. According to it, the business case for sustainability did not produce the expected sustainability outcomes in SMEs. They suggested instituting regulatory standards covering business activities as the surest path to SME sustainability. Similarly, even though Epstein and Roy (2003) also argue for business cases for sustainability, the paper indicates that businesses are unable to prove these business cases for sustainability, showing that this approach to ensuring sustainability performance is not realistic for especially SMEs.

#### *RQ4. What are the challenges of implementing BMfS among SMEs?*

A discussion of current literature on BMfS and sustainability presented a few challenges that firms and especially SMEs, are likely to face when implementing such programs. According to Álvarez Jaramillo, Zartha Sossa, & Orozco Mendoza (2019), the significant challenge for their sustainability was funding closely followed by the economic environment. This combination makes attempting to implement sustainability goals and BMfS specifically quite ambitious. Similarly, Tura, Keranen, and Patala (2019) captured financial or economic challenges as economic tension in their “darker side of sustainability” paper. According to them, financial constraints are usually; the investments firms must commit to sustainability-oriented programs. Typically, such investments do not have financial paybacks, and in instances when these do, the payback period could be long. This results in another problem where sustainability then competes with other business goals.

The paper also mentioned structural challenges involving reduced power positions regarding stakeholder relationships and increased external controls. Instituting goals means opening the firm up for further scrutiny. Besides, it also requires that the firm ensure that its stakeholders emulate their example in sustainability practices (Tural et al., 2019). The final thing the paper mentions is behavioral tensions; these are internal issues that work against instituting sustainability or BMfS. A significant source of internal resistance may be from employees; this is because it is vital to equip employees with new ways of attaining sustainability goals. However, as the paper explains, employees are reluctant to learn new sustainability-related skills and resist such purposes.

All these issues were fully captured in the instrument in the section for challenges such as expenses, re-training employees, complicated stakeholder relationships, and competing with business goals. The results indicated that all the SME managers fully agreed that these potential challenges could impede sustainability implementation. These results are not only in consonant with the current literature in developed economies but also in a developing country like Ghana, where SME managers perceive all these factors as roadblocks to sustainability.

Considering that sustainability concerns have become popular among firms and stakeholders, and there are so many expectations for firms to be sustainable, the challenges associated with them must be identified and discussed. This is because ignoring firms' challenges when implementing sustainability strategies or BMfS can potentially disrupt and discourage implementing BMfS strategies in the long run.

## **7 CONTRIBUTIONS OF THE STUDY**

The thesis has examined the relationship among BMfS, market readiness, business case drivers, and sustainability performance. The study has resulted in some exciting outcomes, some expected others not. These have been thoroughly discussed in light of existing literature. This section now explores the relevance of the entire study, i.e., theoretical, practical, and policy implications.

### **7.1 Theoretical implications**

Generally, this work has highlighted the need for more researchers to study sustainability performance, especially in the SME context. It has created awareness in the sustainability literature that this gap must be filled to achieve global sustainability. Even though there are several opportunities for ensuring sustainability, the thesis has chosen to focus on SME sustainability by discussing a radical approach to reaching sustainability performance, i.e., BMfS. The outcome of the study has supported the need for this study.

The work supports the growing assertion that BMfS contributes to sustainability performance, as posited by some scholars. Beyond the conceptual and a few empirical works, the thesis has proven that investments in BMfS contribute to sustainability. This has expanded the quantity and quality of the discussion on the topic. The thesis has provided an additional reference for an empirical study on the subject, an extensive literature review connecting the variables, and sound reasons why such a study should be undertaken. The uniqueness of this contribution is also in the setting where perceptions of SMEs in a developing context were sought. This work is vital given that the general sustainability discussion has occurred within the context of large well-to-do firms operating in developing countries. This contribution is quite valid as it further deepens the BMfS discussion and creates the needed awareness among researchers to invest resources into studying it.

Another essential contribution is the framework that guided the study. The thesis built the framework based on three widely used theories in sustainability studies using existing conceptual and logical arguments. This formed the foundation for this scientific inquiry. Additionally, as with most scientific studies, the work expanded on the fundamental relationship between the independent and the dependent variables by introducing two variables for mediating and moderating purposes. This was done to ascertain the impact of these variables on the main variables. Despite the arguments in the extant literature, especially concerning the mediators, the outcome proved otherwise in the context of the study. This illustrates the need for researchers to be cautious when selecting their variables, as the evidence may not necessarily support the literature. Of course, in this instance, the results claim that SMEs in Ghana did not perceive that business case drivers were relevant for sustainability performance. Irrespective of the outcome, including the indirect effect, presents another distinctive feature of this work since no study has examined the variables in this manner.

Additionally, the discussion has vastly contributed to a thorough appreciation of the possible reasons for the outcome of the thesis using existing literature. For example, additional possibilities and explanations have been provided why some hypotheses were not accepted. This was possible because this work pulled several related works together to help provide a better discussion of the phenomenon under study. Regarding SME sustainability and BMfS, this work has provided a rich pool of credible resources for future studies. The significant contribution here is that the work has provided insights into how other researchers can go about their scientific inquiries regarding how they can approach their literature review and discussions.

An interesting aspect of this work is market readiness, which has seen little interest in business research. The current work has illustrated its perceived usefulness in sustainability performance among SMEs in Ghana. The result has created some theoretical basis for including it in BMfS and sustainability discussions, and based on

the findings, this conclusion seems quite reasonable. This work has uncovered a “new variable” (market readiness) that can be included in the sustainability discussion. Besides, this outcome suggests that other variables may need to be investigated for use in sustainability discussions, along with fitting theories that can support them.

Referring to the challenges, the work has provided some scientific perspectives on a few major sustainability problems. The work used a quantitative approach in analysing the problems based on the responses. This validates existing work mainly based on qualitative methodology and provides a good starting point for future scientific results on challenges associated with sustainability.

Finally, this work has ventured into sustainable business models even though minimal empirical work is available. It has explored and explained it by highlighting some direct and indirect relationships that can affect it. The scientific approach used in this work provides confidence in further exploring the BMfS ideology along with its measurement variables as suggested in existing literature, including this thesis. The outcome of this work contributes to the theoretical argument that studies in BMfS are not mere trends but a strategy that can be established in business research.

## **7.2 Practical implications**

This thesis presents a few practical implications for firms interested in BMfS. First, the work shows that firms must build their value proposition strategies if they are interested in instituting BMfS. The value proposition for such SMEs could include offering products that satisfy and address customers’ needs, expanding their markets even with their existing products, and maintaining or exploring distribution channels that their customers prefer. This means that the key to starting BMfS is focusing on customer needs and satisfying them to the best of their abilities. Beyond these value propositions identified in the case of SMEs in Ghana, it may be necessary for firms to continue to experiment with other activities that are customer-centered.

According to the outcome of this work, the second practical thing that can contribute to BMfS is ensuring value creation. As explained in this thesis, value creation represents the benefits (unique) of the product. It is actualizing the value propositions that the firm has highly advertised. This complements the BMfS process since it fulfills the promised value proposition. This means that SMEs interested in BMfS must ensure they work to give value to their customers. Anything less than this will affect the success of their BMfS program. As shown in this work, this would include quality products, excellent customer service (before, during, and after sales), offering competitive prices, and delivering competitive processes to customers.

The third practical aspect of this work is how business drivers influence BMfS and sustainability performance. The outcome of this work shows that it may be unnecessary

for firms to invest in business drivers to enhance their sustainability performance since there is no practical value. This does not mean that business case drivers in themselves are ineffective; they may have been because of the nature of the current studies. SMEs with similar circumstances as those studied in this work can take advantage of the finding by channelling their limited resources for other things or aiming their business case drivers for further benefits.

The final practical value of this thesis is the outcome of market readiness. Even though the initial result showed that it has theoretical relevance, the work indicates that it has no practical value to firms regarding sustainability performance. As was demonstrated in the literature review, readiness is useful in technology-related products and with large firms. This should inform SMEs to be cautious about price-related decisions that aim at ensuring market readiness since they will not reap the expected benefits. SMEs, especially in developing countries, should be prudent when fixing prices. This will require fixing prices that are competitive and acceptable to their markets.

### **7.3 Policy implications**

The study's findings suggest that SMEs can be successful in terms of sustainability goals if they implement sustainability business models. Despite this, some studies reveal SMEs essentially care about their economic goals. This is because the study found that it was perceived that, theoretically and practically, sustainability business models contribute to sustainability performance. With this in mind, stakeholders must abandon the voluntary and ethical expectations about sustainability performance. That situation must change since it does not yield as much results as seen in the level of destruction in developing countries, with Ghana being a classic example. It is vital to ensure compliance.

Compliance is when standards or guidelines are established to ensure that individuals and groups adhere to them. A significant way by which compliance is achieved is through laws, policies, and regulations. Indeed, most organisations and societies that function properly require these. Hence, the work recommends that even though the results captured perceptions, political authorities must institute needed regulations to coerce SMEs into compliance. There should be clear expectations about how SMEs would incorporate sustainability business models into their activities. This could be tied to the conditions of their operating license; without it, they would not be allowed to commence their activities. There should be solid regulations on these issues so that new SMEs would appreciate the need to develop such strategies.

On the other hand, existing SMEs could be given definite timelines for incorporating sustainability business models into their business activities. Such businesses should be

supported by state and specialist agencies on how to develop and institute such business models since they will be alien to their actions, and they may have little to no knowledge about them. Beyond the regulation to incorporate such business models, exercising controls regularly for compliance is equally important. Stringent checks must be part of the policies so offenders can be charged for non-compliance. It is believed that such an approach will provide the needed motivation for sustainability business models since the study has provided some evidence that business case drivers may not be effective.

Policies should also consider the “special needs” of SMEs to maintain the balance between economic, social, and environmental demands. Policies targeting SMEs could primarily focus on the first two aspects of NBRT: pollution prevention and product stewardship. These could be defined as simple tasks for SMEs without necessarily overwhelming them, especially for the new ones dealing with teething issues. Over time, as the SMEs grow, additional demands could be made regarding their sustainability business models.

## **8 CONCLUSIONS, LIMITATIONS, AND FUTURE RESEARCH DIRECTION**

The final section of this work presents the conclusions, limitations of the work, and suggestions for future research. The conclusion summarizes the entire work by highlighting each of the major sections. The limitations discuss four main weaknesses in the work and provide a basis for suggesting future research directions for other researchers to explore.

### **8.1 Conclusion**

This thesis work was borne out of interest in SMEs' sustainability performance, especially in developing countries. A thorough literature review on the matter also exposed the existing gaps in the general research area. Based on existing literature, the plan for this work was developed. The thesis started by exploring sustainability performance and the specific tools/ strategies for achieving it. Current literature mentioned BMfS as a means for attaining SMEs' sustainability performance; hence, the focus on BMfS. The introductory part of the thesis was then developed by highlighting the gaps associated with sustainability performance in general and BMfS. Four significant gaps were identified in the literature concerning BMfS and sustainability performance. 1. The general lack of empirical studies on BMfS as a whole. 2. The lack of studies on the direct relationship between BMfS and sustainability performance. 3. The lack of scientific works on any indirect impacts on BMfS and sustainability performance. 4. The challenges associated with implementing sustainability projects and



BMfS. The primary outcome of this thesis's introductory part was the study's four research questions (and objectives).

The second section presented a thorough examination of the current existing literature on the research topic. This began with the relevance of sustainability performance and specifically in the Ghanaian context. It discussed the lack of research on SMEs' sustainability performance in Africa in general while focusing on Ghana. A theoretical framework for the work followed this. The framework included four theories that support the arguments for sustainability performance. These theories are sustainability-oriented theory, natural resource base theory, stakeholder theory, and theory of planned behaviour. All these theories directly support the implementation of sustainability and BMfS and the inclusion of other variables that were included in the study. The next step was an analysis of the literature on all the relationships in the study. First, with the aid of existing literature, it was argued that BMfS affects SMEs' performance. Several researchers have presented arguments to that effect using largely conceptual reasoning. The point of congruence for these researchers was that current sustainability trends had not yielded optimum results hence the need to develop a business model specifically for directing sustainability goals.

Another central argument in the thesis was the need to assess the scientific veracity of the argument for business case drivers. According to its proponents, the basis for this mediator is that firms must be rightly motivated to engage in sustainability performance. This is a logical argument considering the costs related to implementing sustainability. The research papers argued that such case drivers are the keys to attaining optimum sustainability performance. Of course, sustainable business models were necessary, but the case drivers would ultimately determine their effectiveness. The thesis agreed with these arguments as well. Two case drivers that were relatable to the thesis were selected for the study.

Also, a moderating factor was introduced. This was done based on the theory of planned behaviour, which is not directly related to sustainability but could explain why people chose to implement it. With other studies on applying the theory, market readiness was part of the research model to ascertain whether it impacted the relationship between the main variables. In addition to these, some challenges that have been outlined in the literature were also identified for use in the study.

The discussion of the literature produced three significant outcomes. These are the hypotheses, the conceptual framework, and the research instrument. The hypotheses were developed such that they would aid in answering the research questions. A total of eight hypotheses were produced, with two expressing the indirect relationships in the study. The research instrument was also developed to assist in data collection.

The following section in the thesis write-up is the methodology. The choice of research methodology and its appropriateness were both discussed. The study population and sample that was used for the study were provided. A thorough explanation was also offered to justify the selection of the population as well as the sample size. Of course, these were based on suggestions, recommendations, and best practices as portrayed in scientific journals, papers, and research methodology textbooks. This section also contained the work's study instrument and related issues. It specifically talked about CMB matters and instrument pre-testing.

The empirical results followed next. This captured all the various preliminary tests to ascertain the instrument's reliability and validity and to check the measurement model's appropriateness. The structural model was assessed, leading to acceptance (or rejection) of the hypotheses and ultimately answering the research questions.

From the entire work, it was perceived that BMfS is vital to enhancing SME sustainability performance. SMEs in Ghana and, by extension, other developing economies in sub-Saharan Africa with or without sustainability focus largely agreed that when instituted, BMfS could result in achieving sustainability goals. Additionally, it was perceived that all the critical elements of BMfS could directly contribute to sustainability performance. This potentially makes it a vital variable in sustainability works. The first research question was answered from the hypotheses related to this relationship. It was perceived that there was a direct relationship between BMfS and SMEs' sustainability performance.

Second, concerning market readiness, the hypothesis supported the perception that it influences the direct relationship. However, after further scrutiny, it was determined that the perceived impact was statistically insignificant. From this position, the answer to the research question is that market readiness has minimal perceived relevance in the relationship. Yet, further studies may need to ascertain the conditions under which that may be possible.

Third, contrary to the popular notion in BMfS literature, it was perceived that BCDs did not explain sustainability performance within the context of this study. This was an unexpected result considering the level of support it has in the literature. It must be stated that only two of the BCDs were used in the study, so it does not necessarily mean that they all cannot explain BMfS and sustainability performance. However, about this work and the conditions set for it, the answer to the research question is the perceived impact of BCDs on the relationship between BMfS and SMEs' sustainability performance. It was found that it was not impactful.

The final issue regarding the study's focus was the challenges associated with BMfS. The aim was to establish whether the SMEs perceived the listed problems as relevant. The answers were unequivocal; BMfS implementation has perceived challenges.

## **8.2 Limitations of the study**

Because the scope of the thesis was defined to ensure that it was achievable within a reasonable time frame, the study suffers from some inherent limitations. It must be noted that no scientific work covers every aspect of the variables under consideration. Else, there would not be a need for future studies. Also, these limitations do not detract from the scientific nature and the rigorous methodology implemented to conclude the work; neither does it minimize the study's relevance.

Even though the thesis uses the phrase “developing country context,” it does not mean that the work represents the situation in all developing countries. This work was conducted in Ghana, so it tells the Ghanaian story. However, it is anticipated that considering Ghana's substantial similarity with most sub-Saharan African countries, the results are relatable to those countries. The results may give some ideas about what may pertain in such developing countries. However, it cannot be generalized to all other developing states that do not share substantial similarities with Ghana and its sub-Saharan neighbours. Second, data were collected based on the perceptions of the managers/owner-managers of the SMEs that acceded to our request to participate in the study. The work reflects the thoughts and ideas of the respondents, not their practices, concerning BMfS and sustainability performance. Because if that, it would not be fair or proper to suppose that the conclusions reached in the study would be the same had the study examined actual BMfS practices. Another limitation of this work is the number of BCDs that were used. The two selected were based on appropriateness for the study. It

would also be suitable to conclude that all BCDs in the extant literature are not helpful for sustainability performance.

### **8.3 Suggestion for future work**

This thesis work has touched on how BMfS can impact sustainability performance. It has served as an eye-opener to the impact of other variables in sustainability discussions. The work, in general, has resulted in several valuable outcomes, which have already been discussed in the preceding sections of this work. The thesis has also uncovered some opportunities for future studies. These will be discussed next.

First, this work focused on SMEs in a developing country setting. The private sector is not limited to SMEs and includes large holding firms. These firms can respond to the issues that were discussed in the work. There is no doubt that there is an urgent need for studies in sustainability in developing countries, so it is suggested that another examination is conducted using larger firms. There is also the possibility of other Africans doing a similar study in other African countries so that the findings of this work could be validated. This is important because one of the goals of this work was to provide some perspectives from developing economies, mainly from Africa.

As already indicated, the work was limited to assessing the perceptions of SMEs. It was impossible to study actual happenings in BMfS since sustainability practices are not very well established in Ghana and Africa. Even though perceptions can reflect reality, it is better to assess validity. It hence suggested that a different set of respondents are used for this study to capture actual responses on BMfS. Determining whether the outcome will be similar in such a study is essential.

Even though it is not unusual, there is a need to explore further the discrepancy between the theoretical and practical contributions of marketing readiness. It is essential to bring some finality or at least probe it to provide a better explanation. This can be resolved through further studies.

Finally, the thesis work disproves the role of two business case drivers in sustainability performance. This does not conclude the relevance of business case drivers because (1) there are more than two, and (2) there are overwhelming theoretical and conceptual arguments in favour of BCDs in sustainability performance. This only makes

it imperative to continue empirical studies on BCDs and their impacts on achieving sustainability performance.

## **BIBLIOGRAPHY**

Abdelkafi, N., & Täuscher, K. (2015). Business models for sustainability from a system dynamics perspective. *Organization & Environment*, 29 (1), 74-96. Retrieved from <https://doi.org/10.1177/1086026615592930>

Abokah, Y. E., Cobbinah, J. S., & Doke, D. A. (2018). Review of environmental and health impacts of mining in Ghana. *Journal of Health and Pollution*, 8(17), 43-52.

Abokyi, E., Strijker, D., Asiedu, K. F., & Daams, M. N. (2020). The impact of output price support on smallholder farmers' income: evidence from maize farmers in Ghana. *Heliyon*, 6(9), e05013.

Achabou, M. A., & Dekhili, S. (2013). Luxury and sustainable development: Is there a match? *Journal of business research*, 66(10), 1896-1903.

Adomako, S., Amankwah-Amoah, J., Danso, A., & Dankwah, G. O. (2021). Chief executive officers' sustainability orientation and firm environmental performance: Networking and resource contingencies. *Business Strategy and the Environment*, 30(4), 2184–2193. <https://doi.org/10.1002/bse.2742>

Aggarwal, P. (2013). Impact of Sustainability Performance of Company on its Financial Performance: A Study of Listed Indian Companies. *Type: Double Blind Peer Reviewed International Research Journal Publisher: Global Journals Inc*, 13. <https://ssrn.com/abstract=3131923> Electronic copy available at: <https://ssrn.com/abstract=3131923> Electronic copy available at: <https://ssrn.com/abstract=3131923>

Ajzen, I. (2011). The theory of planned behaviour: Reactions and reflections. In *Psychology and Health* (Vol. 26, Issue 9, pp. 1113–1127). <https://doi.org/10.1080/08870446.2011.613995>

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.

Albayrak, T., Aksoy, Ş., & Caber, M. (2013). The effect of environmental concern and skepticism on green purchase behaviour. *Marketing Intelligence & Planning*

Alhouti, S., Johnson, C. M., & Holloway, B. B. (2016). Corporate social responsibility authenticity: Investigating its antecedents and outcomes. *Journal of business research*, 69(3), 1242-1249.

- Ali, A., Kelley, D. J., & Levie, J. (2020). Market-driven entrepreneurship and institutions. *Journal of Business Research*, *113*, 117-128.
- Ali, S., Ullah, H., Akbar, M., Akhtar, W., & Zahid, H. (2019). Determinants of consumer intentions to purchase energy-saving household products in Pakistan. *Sustainability*, *11*(5), 1462.
- Alonso-Martinez, D., De Marchi, V., & Di Maria, E. (2021). The sustainability performances of sustainable business models. *Journal of Cleaner Production*, *323*, 129145.
- Alshehhi, A., Nobanee, H., & Khare, N. (2018). The impact of sustainability practices on corporate financial performance: Literature trends and future research potential. In *Sustainability (Switzerland)* (Vol. 10, Issue 2). MDPI. <https://doi.org/10.3390/su10020494>
- Álvarez Jaramillo, J., Zарtha Sossa, J. W., & Orozco Mendoza, G. L. (2019). Barriers to sustainability for small and medium enterprises in the framework of sustainable development—Literature review. *Business Strategy and the Environment*, *28*(4), 512-524.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological bulletin*, *103*(3), 411.
- Antonopoulou, K., & Begkos, C. (2020). Strategizing for digital innovations: Value propositions for transcending market boundaries. *Technological Forecasting and Social Change*, *156*. <https://doi.org/10.1016/j.techfore.2020.120042>
- Arrigo, E., Liberati, C., & Mariani, P. (2021). Social Media Data and Users' Preferences: A Statistical Analysis to Support Marketing Communication. *Big Data Research*, *24*. <https://doi.org/10.1016/j.bdr.2021.100189>
- Azumah, F. D., Baah, E., & Nachinaab, J. O. (2021). Causes and effects of illegal gold mining (Galamsey) activities on school dropout and residents at the Tutuka central circuit in Obuasi Municipality in Ashanti Region, Ghana. *Journal of Education*, *201*(3), 162-173.
- Babiak, K., & Kihl, L. A. (2018). A Case Study of Stakeholder Dialogue in Professional Sport: An Example of CSR Engagement. *Business and Society Review*, *123*(1), 119–149. <https://doi.org/10.1111/basr.12137>
- Bagozzi, R. P., & Yi, Y. (2012). Specification, evaluation, and interpretation of structural equation models. *Journal of the academy of marketing science*, *40*, 8-34.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, *16*(1), 74–94.

- Bianchi, C., Cosenz, F., & Marinković, M. (2015). Designing dynamic performance management systems to foster SME competitiveness according to a sustainable development perspective: empirical evidences from a case-study. *International Journal of Business Performance Management* 31, 16(1), 84-108.
- Baldassarre, B., Calabretta, G., Bocken, N. M. P., & Jaskiewicz, T. (2017). Bridging sustainable business model innovation and user-driven innovation: A process for sustainable value proposition design. *Journal of Cleaner Production*, 147, 175–186. <https://doi.org/10.1016/j.jclepro.2017.01.081>
- Bangbade, J. A., Nawi, M. N. M., Kamaruddeen, A. M., Adeleke, A. Q., & Salimon, M. G. (2019). Building sustainability in the construction industry through firm capabilities, technology and business innovativeness: empirical evidence from Malaysia. *International Journal of Construction Management*, 1-16.
- Banerjee, S. B. (2008). Corporate social responsibility: The good, the bad and the ugly. *Critical sociology*, 34(1), 51-79.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of management*, 17(1), 99-120.
- Bawakyillenuo, S., & Agbelie, I. S. K. (2021). Environmental consciousness of entrepreneurs in ghana: How do entrepreneur types, demographic characteristics and product competitiveness count? *Sustainability (Switzerland)*, 13(16). <https://doi.org/10.3390/su13169139>
- Benitez-Amado, J., Perez-Arostegui, M. N., & Tamayo-Torres, J. (2010). Information technology-enabled innovativeness and green capabilities. *Journal of Computer Information Systems*, 51(2), 87-96.
- Bennett, N. J., Whitty, T. S., Finkbeiner, E., Pittman, J., Bassett, H., Gelcich, S., & Allison, E. H. (2018). Environmental stewardship: a conceptual review and analytical framework. *Environmental management*, 61, 597-614
- Bhupendra, K. V., & Sangle, S. (2016). Pollution prevention strategy: a study of Indian firms. *Journal of Cleaner Production*, 133, 795–802. <https://doi.org/10.1016/j.jclepro.2016.05.169>
- Boachie-Mensah, F. O., & Owusu, A. Y. (2015). Environmental dimensions of corporate social responsibility and brand equity. *European Journal of Applied Business and Management*, 1(2) 156-168 Retrieved from <http://nidisag.isag.pt/index.php/IJAM/article/view/87>
- Boakye, S. (2018). Ghana's Attempts at Industrialization: How Can the Country Achieve the Success It Yearns For?. *Occasional Paper*, (19).

- Bocken, N. M. P., Short, S. W., Rana, P., & Evans, S. (2014). A literature and practice review to develop sustainable business model archetypes. *Journal of Cleaner Production*, *65*, 42–56. <https://doi.org/10.1016/j.jclepro.2013.11.039>
- Bocken, N., Short, S., Rana, P., & Evans, S. (2013). A value mapping tool for sustainable business modelling. *Corporate Governance: The International Journal of Business in Society*, *13*(5), 482–497. <https://doi.org/10.1108/CG-06-2013-0078>
- Borenstein, M., Cohen, J., Rothstein, H. R., Pollack, S., & Kane, J. M. (1992). A visual approach to statistical power analysis on the microcomputer. *Behavior Research Methods, Instruments, & Computers*, *24*(4), 565–572.
- Brockhaus, S., Fawcett, S. E., Knemeyer, A. M., & Fawcett, A. M. (2017). Motivations for environmental and social consciousness: Reevaluating the sustainability-based view. *Journal of Cleaner Production*, *143*, 933–947. <https://doi.org/10.1016/j.jclepro.2016.12.027>
- Brundtland Report (1987). Report of the World Commission on Environment and Development: Our common future. Retrieved from <http://www.ask-force.org/web/Sustainability/Brundtland-Our-Common-Future-1987-2008.pdf>
- Calik, E., & Bardudeen, F. (2016). A Measurement Scale to Evaluate Sustainable Innovation Performance in Manufacturing Organizations. *Procedia CIRP*, *40*, 449–454. <https://doi.org/10.1016/j.procir.2016.01.091>
- Cantele, S., & Zardini, A. (2018). Is sustainability a competitive advantage for small businesses? An empirical analysis of possible mediators in the sustainability–financial performance relationship. *Journal of Cleaner Production*, *182*, 166–176. <https://doi.org/10.1016/j.jclepro.2018.02.016>
- Cardoni, A., Zanin, F., Corazza, G., & Paradisi, A. (2020). Knowledge management and performance measurement systems for SMEs' economic sustainability. *Sustainability (Switzerland)*, *12*(7). <https://doi.org/10.3390/su12072594>
- Carroll, A. B., & Shabana, K. M. (2010). The business case for corporate social responsibility: A review of concepts, research and practice. *International journal of management reviews*, *12*(1), 85–105
- Carroll, A. B. (1999). Corporate social responsibility: Evolution of a definitional construct. *Business & society*, *38*(3), 268–295.
- Chandler, J. D., & Lusch, R. F. (2015). Service Systems: A Broadened Framework and Research Agenda on Value Propositions, Engagement, and Service Experience. *Journal of Service Research*, *18*(1), 6–22. <https://doi.org/10.1177/1094670514537709>
- Chatterjee, S., Rana, N. P., & Dwivedi, Y. K. (2022). Assessing consumers' co-production and future participation on value co-creation and business benefit: an F-P-C-



- B Model Perspective. *Information Systems Frontiers*, 24(3), 945–964. <https://doi.org/10.1007/s10796-021-10104-0>
- Chen, T. Y., Kuo, F.-C., Liu, H., & Wong, W. E. (2013). Code coverage of adaptive random testing. *IEEE Transactions on Reliability*, 62(1), 226–237.
- Chen, M. F., & Tung, P. J. (2014). Developing an extended theory of planned behavior model to predict consumers' intention to visit green hotels. *International Journal of Hospitality Management*, 36, 221-230.
- Choi, J. H., Kim, S., & Yang, D. H. (2018). Small and medium enterprises and the relation between social performance and financial performance: Empirical evidence from Korea. *Sustainability (Switzerland)*, 10(6). <https://doi.org/10.3390/su10061816>
- Christmann, P. (2000). Effects of “best practices” of environmental management on cost advantage: The role of complementary assets. *Academy of Management journal*, 43(4), 663-680.
- Clauss, T. (2017). Measuring business model innovation: conceptualization, scale development, and proof of performance. *R&d Management*, 47(3), 385-403.
- Cohen, J. (1992). Statistical power analysis. *Current directions in psychological science*, 1(3), 98-101.
- Cohen, B. & Winn, M. (2007). Market imperfections, opportunity and sustainable entrepreneurship. *Journal of Business Venturing* 22(1), 29-49. Retrieved from <https://doi.org/10.1016/j.jbusvent.2004.12.001>
- Collins, H., & Saliba, C. (2020). Connecting people to purpose builds a sustainable business model at Bark House. *Global Business and Organizational Excellence*, 39(3), 29-37. Retrieved from <https://doi.org/10.1002/joe.21992>
- Creswell, J. W. (2003). A framework for design. *Research design: Qualitative, quantitative, and mixed methods approaches*, 2003, 9-11.
- Creswell, J. W. (2014). *A concise introduction to mixed methods research*. SAGE publications.
- Curtis, S. K., & Mont, O. (2020). Sharing economy business models for sustainability. *Journal of Cleaner Production*, 266. <https://doi.org/10.1016/j.jclepro.2020.121519>
- De Clercq, D., & Voronov, M. (2011). Sustainability in entrepreneurship: A tale of two logics. *International Small Business Journal*, 29(4), 322-344. Retrieved from <https://doi.org/10.1177%2F0266242610372460>

- Domenico, G. Di, Sit, J., Ishizaka, A., & Nunan, D. (2021). Fake news, social media and marketing: A systematic review. In *Journal of Business Research* (Vol. 124, pp. 329–341). Elsevier Inc. <https://doi.org/10.1016/j.jbusres.2020.11.037>
- Dijkman, R. M., Sprenkels, B., Peeters, T., & Janssen, A. (2015). Business models for the Internet of Things. *International Journal of Information Management*, 35(6), 672–678. <https://doi.org/10.1016/j.ijinfomgt.2015.07.008>
- Dilthey, W., 1972. The rise of hermeneutics. *New Lit. Hist.* 3 (2), 229e244. ( the name in the main work is Dilthy
- Dolega, L., Rowe, F., & Branagan, E. (2021). Going digital? The impact of social media marketing on retail website traffic, orders and sales. *Journal of Retailing and Consumer Services*, 60. <https://doi.org/10.1016/j.jretconser.2021.102501>
- Dreyfus, H. L. (1980). Holism and Hermeneutics. *Rev. Metaphys.* 34(1), 3-23
- Eden, S. (1994). Using sustainable development: The business case. *Global Environmental Change*, 4 (2), 160–167. Retrieved from [https://doi.org/10.1016/0959-3780\(94\)90050-7](https://doi.org/10.1016/0959-3780(94)90050-7)
- Eikelenboom, M., & de Jong, G. (2019). The impact of dynamic capabilities on the sustainability performance of SMEs. *Journal of Cleaner Production*, 235, 1360–1370. <https://doi.org/10.1016/j.jclepro.2019.07.013>
- Elkington, J. (1998). Accounting for the triple bottom line. *Measuring business excellence*.
- Epstein, M. J., & Roy, M. J. (2003). Making the business case for sustainability: linking social and environmental actions to financial performance. *Journal of Corporate Citizenship*, (9), 79-96.
- Fagbemi, F., Nzeribe, G. E., Osinubi, T. T., & Asongu, S. (2021). Interconnections between governance and socioeconomic conditions: Understanding the challenges in sub-Saharan Africa. *Regional Sustainability*, 2(4), 337-348
- Fairlie, R. W., & Fossen, F. M. (2018). Opportunity versus necessity entrepreneurship: Two components of business creation.
- Figge, F., Hahn, T., Schaltegger, S., & Wagner, M. (2002). The sustainability balanced scorecard—linking sustainability management to business strategy. *Business strategy and the Environment*, 11(5), 269-284.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18, 39-50.

- Forrester, J. W. (2013). Economic theory for the new millennium (2003). *System Dynamics Review*, 29(1), 26-4. Retrieved from <https://doi.org/10.1002/sdr.1490>
- Foss, N. J., & Saebi, T. (2017). Fifteen years of research on business model innovation: How far have we come, and where should we go? *Journal of Management*, 43(1), 200–227. <https://doi.org/10.1177/0149206316675927>
- Frambach, R. T., Fiss, P. C., & Ingenbleek, P. T. (2016). How important is customer orientation for firm performance? A fuzzy set analysis of orientations, strategies, and environments. *Journal of Business Research*, 69(4), 1428-1436.
- Freeman, R. E., & Gillbert Jr, D. R. (1992). Business, ethics and society: A critical agenda. *Business & Society*, 31(1), 9-17.
- Freeman, R.E., (1984). *Strategic Management. A Stakeholder Approach*. Pitman Publishing Inc., Boston.
- Freeman, R. E., Harrison, J. S., Wicks, A. C., Parmar, B. L., & De Colle, S. (2010). Stakeholder theory: The state of the art.
- Friedman, M. (1970) The Social Responsibility of Business Is to Increase Its Profits. *New York Times Magazine*, 13 September 1970, 122-126.
- Gadenne, D., Sharma, B., Kerr, D., & Smith, T. (2011). The influence of consumers' environmental beliefs and attitudes on energy saving behaviours. *Energy policy*, 39(12), 7684-7694.
- Gareth, J., Daniela, W., Trevor, H., & Robert, T. (2013). *An introduction to statistical learning: with applications in R*. Springer.
- Garriga, E., & Melé, D. (2004). Corporate social responsibility theories: Mapping the territory. *Journal of business ethics*, 53(1-2), 51-71.
- Gauthier, C., & Gilomen, B. (2016). Business models for sustainability: Energy efficiency in urban districts. *Organization & Environment*, 29(1), 124-144.
- Gautier, A., & Pache, A. C. (2015). Research on Corporate Philanthropy: A Review and Assessment. *Journal of Business Ethics*, 126(3), 343–369. <https://doi.org/10.1007/s10551-013-1969-7>
- Gilles, N., & Christine, L. C. (2016). The Sustainable Value Proposition of PSSs: The Case of ECOBEL “shower Head.” *Procedia CIRP*, 47, 12–17. <https://doi.org/10.1016/j.procir.2016.03.043>
- Global Alliance for Rights of Nature, (2021) retrieved from <https://www.garn.org/> on January 2022

- Gomez-Trujillo, A. M., Velez-Ocampo, J., & Gonzalez-Perez, M. A. (2020). A literature review on the causality between sustainability and corporate reputation: What goes first? *Management of Environmental Quality: An International Journal*.
- Hair Jr, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, 109, 101–110.
- Hair, J., Black, W., Babin, B., and Anderson, R. (2010). *Multivariate data analysis* (7th ed.): Prentice-Hall, Inc. Upper Saddle River, NJ, USA.
- Hall, J. K., Daneke, G. A., & Lenox, M. J. (2010). Sustainable development and entrepreneurship: Past contributions and future directions. *Journal of business venturing*, 25(5), 439-448. <https://doi.org/10.1016/j.jbusvent.2010.01.002>
- Harrington, A., 2001. Dilthey, empathy and verstehen a contemporary reappraisal. *Eur. J. Soc. Theory* 4 (3), 311e329. <http://dx.doi.org/10.1177/13684310122225145>
- Hart, S. L., & Dowell, G. (2011a). A natural-resource-based view of the firm: Fifteen years after. In *Journal of Management* (Vol. 37, Issue 5, pp. 1464–1479). <https://doi.org/10.1177/0149206310390219>
- Hart, S. L. (1995). A natural-resource-based view of the firm. *Academy Management Review*, 20(4), 986-1014.
- Hartmann, P., & Apaolaza-Ibáñez, V. (2012). Consumer attitude and purchase intention toward green energy brands: The roles of psychological benefits and environmental concern. *Journal of business Research*, 65(9), 1254-1263.
- Harvard Business Review. (2011). *Harvard business review on rebuilding your business model*. Harvard Business Press.
- Hayward, R., Lee, J., Keeble, J., McNamara, R., Hall, C., Cruise, S., 2013. The UN Global Compact-accenture CEO Study on Sustainability 2013. UNGC available at: [http://www.accenture.com/Microsites/ungc-ceo-study/Pages/home.aspx?c¼mc\\_prposts\\_10000048&n¼otc\\_1013](http://www.accenture.com/Microsites/ungc-ceo-study/Pages/home.aspx?c¼mc_prposts_10000048&n¼otc_1013).
- Heikkurinen, P., & Bonnedahl, K. J. (2013). Corporate responsibility for sustainable development: a review and conceptual comparison of market-and stakeholder-oriented strategies. *Journal of Cleaner Production*, 43, 191-198.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135.

Hopkins, M. (2005). *Sustainable Philanthropy and CSR Employment strategy View project Oil rich emerging economies View project*. <https://en.wikipedia.org/wiki/Philanthropy>

Hörisch, J., Freeman, R. E., & Schaltegger, S. (2014). Applying Stakeholder Theory in Sustainability Management: Links, Similarities, Dissimilarities, and a Conceptual Framework. *Organization and Environment*, 27(4), 328–346. <https://doi.org/10.1177/1086026614535786>

Hussain, S. T., Lei, S., Akram, T., Haider, M. J., Hussain, S. H., & Ali, M. (2018). Kurt Lewin's change model: A critical review of the role of leadership and employee involvement in organizational change. *Journal of Innovation & Knowledge*, 3 (3), 123-127. Retrieved from <https://doi.org/10.1016/j.jik.2016.07.002>

Jibril, A. B., Kwarteng, M. A., Chovancova, M., & Denanyoh, R. (2020). Customers' Perception of Cybersecurity Threats Toward e-Banking Adoption and Retention: A Conceptual Study. ICCWS 2020 15th International Conference on Cyber Warfare and Security, 270. Academic Conferences and publishing limited.

Johnsen, T. E., Miemczyk, J., & Howard, M. (2017). A systematic literature review of sustainable purchasing and supply research: Theoretical perspectives and opportunities for IMP-based research. *Industrial Marketing Management*, 61, 130-143.

Kaur, M., & Agrawal, S. (2011). Corporate social responsibility-a tool to create a positive brand image. *Proceedings of ASBBS*, 18(1), 681-688.

Khmara, Y., & Kronenberg, J. (2018). Degrowth in business: An oxymoron or a viable business model for sustainability?. *Journal of Cleaner Production*, 177, 721-731.

Khanna, M., Deltas, G., & Harrington, D. R. (2009). Adoption of pollution prevention techniques: The role of management systems and regulatory pressures. *Environmental and Resource Economics*, 44(1), 85–106. <https://doi.org/10.1007/s10640-009-9263-y>

Kim, E., Ham, S., Yang, I. S., & Choi, J. G. (2013). The roles of attitude, subjective norm, and perceived behavioral control in the formation of consumers' behavioral intentions to read menu labels in the restaurant industry. *International Journal of Hospitality Management*, 35, 203-213.

Kline, R. B. (2011). Convergence of structural equation modeling and multilevel modeling.

Kirk, R. E. (2007). Effect magnitude: A different focus. *Journal of statistical planning and inference*, 137(5), 1634-1646.

Klimontowicz, M. (2019). The role of banks' innovativeness in building sustainable market efficiency: the case of Poland. *Entrepreneurship and Sustainability Issues*, 7(1), 525.

Kobos, P. H., Malczynski, L. A., Walker, L. T. N., Borns, D. J., & Klise, G. T. (2018). Timing is everything: A technology transition framework for regulatory and market readiness levels. *Technological Forecasting and Social Change*, 137, 211–225. <https://doi.org/10.1016/j.techfore.2018.07.052>

Kock, F., Berbekova, A., & Assaf, A. G. (2021). Understanding and managing the threat of common method bias: Detection, prevention and control. *Tourism Management*, 86. <https://doi.org/10.1016/j.tourman.2021.104330>

Konys, A. (2019). Green Supplier Selection Criteria: From a Literature Review to a Comprehensive Knowledge Base. *Sustainability*, 11(15), 4208. <https://doi.org/10.3390/su11154208>

Kosiba, J. P., Boateng, H., Okoe, A. F., & Hinson, R. (2020). Trust and customer engagement in the banking sector in Ghana. *The Service industries journal*, 40(13-14), 960-973

Krauss, S. E. (2005). Research Paradigms and Meaning Making: A Primer. In *The Qualitative Report* (Vol. 10). <http://www.nova.edu/ssss/QR/QR10-4/krauss.pdf>

Kristensen, H. S., & Remmen, A. (2019). A framework for sustainable value propositions in product-service systems. *Journal of cleaner production*, 223, 25-35.

Lamberti, L., & Lettieri, E. (2009). CSR Practices and Corporate Strategy: Evidence from a Longitudinal Case Study. *Journal of Business Ethics*, 87(2), 153–168. <https://doi.org/10.1007/s10551-008-9876-z>

Lane, R., & Watson, M. (2012). Stewardship of things: The radical potential of product stewardship for re-framing responsibilities and relationships to products and materials. *Geoforum*, 43(6), 1254–1265. <https://doi.org/10.1016/j.geoforum.2012.03.012>

Langley, D. J., van Doorn, J., Ng, I. C. L., Stieglitz, S., Lazovik, A., & Boonstra, A. (2021). The Internet of Everything: Smart things and their impact on business models. *Journal of Business Research*, 122, 853–863. <https://doi.org/10.1016/j.jbusres.2019.12.035>

Lawrence, S. R., Collins, E., Pavlovich, K., & Arunachalam, M. (2006). Sustainability practices of SMEs: The case of NZ. *Business Strategy and the Environment*, 15(4), 242–257. <https://doi.org/10.1002/bse.533>

Lederman, N. G., & Lederman, J. S. (2015). What is a theoretical framework? A practical answer. *Journal of Science Teacher Education*, 26(7), 593-597.

- Leedy, P. D., & Ormrod, J. E. (2001). Practical research design: Planning and design.
- Lozano, R., Carpenter, A., & Huisingh, D. (2015). A review of ‘theories of the firm’ and their contributions to Corporate Sustainability. *Journal of Cleaner Production*, 106, 430–442. <https://doi.org/10.1016/j.jclepro.2014.05.007>
- Lüdeke-Freund, F., & Dembek, K. (2017). Sustainable business model research and practice: Emerging field or passing fancy? *Journal of Cleaner Production*, 168(2017), 1668-167. Retrieved from <https://doi.org/10.1016/j.jclepro.2017.08.093>.
- Ludeke-Freund, F. (2019) Sustainable entrepreneurship, innovation and business model: integrative framework and propositions for future research. *Bus Strat Env* 29(2020), 665-681. Retrived from <https://doi.org/10.1002/bse.2396>
- Lüdeke-Freund, F., & Dembek, K. (2017). Sustainable business model research and practice: Emerging field or passing fancy? *Journal of Cleaner Production*, 168(2017), 1668-167. Retrieved from <https://doi.org/10.1016/j.jclepro.2017.08.093>
- Massa, L., Tucci, C. L., & Afuah, A. (2017). A critical assessment of business model research. *Academy of Management Annals*, 11(1), 73–104. <https://doi.org/10.5465/annals.2014.0072>
- Menard, S. (2002). *Applied logistic regression analysis* (No. 106). Sage.
- Mendelow, A. (1991). Stakeholder Mapping. Proceedings of the 2nd International Conference on Information Systems. *Cambridge, MA*, 5(2), 61.
- Miles, M. P., & Covin, J. G. (2000). Environmental marketing: A source of reputational, competitive, and financial advantage. *Journal of business ethics*, 23(3), 299-311.
- Miroshnychenko, I., Barontini, R., & Testa, F. (2017). Green practices and financial performance: A global outlook. *Journal of Cleaner Production*, 147, 340–351. <https://doi.org/10.1016/j.jclepro.2017.01.05>
- Müller, M. (2012). *Design-Driven Innovation for Sustainability: A New Method for Developing a Sustainable Value Proposition* (Vol. 4).
- Namazi, M., & Namazi, N.-R. (2016). Conceptual Analysis of Moderator and Mediator Variables in Business Research. *Procedia Economics and Finance*, 36, 540–554. [https://doi.org/10.1016/s2212-5671\(16\)30064-8](https://doi.org/10.1016/s2212-5671(16)30064-8)
- Neville, B. A., Bell, S. J., & Mengüç, B. (2005). Corporate reputation, stakeholders and the social performance-financial performance relationship. *European Journal of Marketing*.
- Owusu Yeboah, A. Y. & Novak, P. (2020). Business models for sustainability and SMEs’ sustainability performance: a conceptual framework. In *DOKBAT-16<sup>th</sup> International*

*Bata Conference for Ph.D. Students and Young Researchers*. Tomas Bata University in Zlin, Zlin, Czech Republic. <http://hdl.handle.net/10563/45937>

Owusu Yeboah, A. Y., Kwarteng, M. A., & Novak, P. (2020). Value Creation Through Social Media Marketing: A Threat to Sustainability Performance? In S. K. Sharma, Y. K. Dwivedi, B. Metri, & N. P. Rana (Eds.), *Re-imagining Diffusion and Adoption of Information Technology and Systems: A Continuing Conversation* (Vol. 618, pp. 475–486). Springer International Publishing. [https://doi.org/10.1007/978-3-030-64861-9\\_42](https://doi.org/10.1007/978-3-030-64861-9_42)

Nanda, S., & Panda, A. K. (2018). The determinants of corporate profitability: an investigation of Indian manufacturing firms. *International Journal of Emerging Markets*, 13(1), 66-86.

Parasuraman, A. (2000). Technology Readiness Index (TRI) a multiple-item scale to measure readiness to embrace new technologies. *Journal of service research*, 2(4), 307-320. Retrieved from <https://doi.org/10.1177%2F109467050024001>

Parguel, B., Benoît-Moreau, F., & Larceneux, F. (2011). How sustainability ratings might deter ‘greenwashing’: A closer look at ethical corporate communication. *Journal of Business Ethics*, 102(1), 15-28.

Patala, S., Jalkala, A., Keränen, J., Väisänen, S., Tuominen, V., & Soukka, R. (2016). Sustainable value propositions: Framework and implications for technology suppliers. *Industrial Marketing Management*, 59, 144–156. <https://doi.org/10.1016/j.indmarman.2016.03.001>

Payne, A., Frow, P., & Eggert, A. (2017). The customer value proposition: evolution, development, and application in marketing. *Journal of the Academy of Marketing Science*, 45(4), 467–489. <https://doi.org/10.1007/s11747-017-0523-z>

Peng, D. X., & Lai, F. (2012). Using partial least squares in operations management research: A practical guideline and summary of past research. *Journal of Operations Management*, 30(6), 467–480.

Podsakoff, P M, MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common Method Biases in Behavioral Research: A critical common method biases in behavioral research: A critical. *Journal of Applied Psychology*, 88(5), 879–903.

Podsakoff, Philip M, MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 63, 539–569.

Porter, M. E. (1985). Competitive advantage free press. *New York*, 33, 61

Quagraine, F. A., Adams, S., Kabalan, A. A. M., & Dankwa, A. D. (2021). Micro-entrepreneurship, sustainable development goal one and cultural expectations of



- Ghanaian women. *Journal of Entrepreneurship in Emerging Economies*, 13(1), 86–106. <https://doi.org/10.1108/JEEE-11-2019-0174>
- Radenkovic, M., Bogdanovic, Z., Despotovic-Zrakic, M., Labus, A., & Lazarevic, S. (2020). Assessing consumer readiness for participation in IoT-based demand response business models. *Technological Forecasting and Social Change*, 150(2020), 1-15.
- Rauter, R., Jonker, J., & Baumgartner, R. J. (2017). Going one's own way: drivers in developing business models for sustainability. *Journal of Cleaner Production*, 140, 144–154. <https://doi.org/10.1016/j.jclepro.2015.04.104>
- Reilly, T. M., & Jones III, R. (2017). Mixed methodology in family business research: Past accomplishments and perspectives for the future. *Journal of Family Business Strategy*, 8(3), 185-195.
- Ribeiro, I., Sobral, P., Peças, P., & Henriques, E. (2018). A sustainable business model to fight food waste. *Journal of Cleaner Production*, 177, 262–275. <https://doi.org/10.1016/j.jclepro.2017.12.200>
- Ringle, C. M., Wende, S., & Becker, J. M. (2015). SmartPLS 3. SmartPLS GmbH, Boenningstedt. *Journal of Service Science and Management*, 10(3), 32-49.
- Roome, N., & Louche, C. (2016). Journeying Toward Business Models for Sustainability: A Conceptual Model Found Inside the Black Box of Organisational Transformation. *Organization and Environment*, 29(1), 11–35. <https://doi.org/10.1177/1086026615595084>
- Rossignoli, F., & Lionzo, A. (2018). Network impact on business models for sustainability: Case study in the energy sector. *Journal of Cleaner Production*, 182, 694–704. <https://doi.org/10.1016/j.jclepro.2018.02.015>
- Salum, F. A., Coleta, K. G., Rodrigues, D. P., & Lopes, H. E. G. (2019). The Business Models' Value Dimensions: An Analytical Tool. *Revista Ibero-Americana de Estratégia*, 18(3), 438–459. <https://doi.org/10.5585/ijsm.v18i3.2777>
- Sangle, S., & Ram Babu, P. (2007). Evaluating sustainability practices in terms of stakeholders' satisfaction. *International Journal of Business Governance and Ethics*, 3(1), 56-76.
- Schaltegger, S., & Wagner, M. (2011). Sustainable entrepreneurship and sustainability innovation: Categories and interactions. *Business Strategy and the Environment*, 20(4), 222–237. <https://doi.org/10.1002/bse.682>
- Schaltegger, S., & Burritt, R. (2018). Business cases and corporate engagement with sustainability: Differentiating ethical motivations. *Journal of Business Ethics*, 147(2), 241–259. <https://doi.org/10.1007/s10551-015-2938-0>

- Schaltegger, S., Hansen, E. G., & Lüdeke-Freund, F. (2016). Business Models for Sustainability: Origins, Present Research and Future Avenues. *Organization & Environment*, 29(1), 8.
- Schaltegger, S., Lüdeke-Freund, F., & Hansen, E. G. (2012). Business cases for sustainability: the role of business model innovation for corporate sustainability. *International Journal of Innovation and Sustainable Development*, 6(2), 95-119. Retrieved from <https://doi.org/10.1504/IJISD.2012.046944>
- Schneider, S., & Clauß, T. (2020). Business Models for Sustainability: Choices and Consequences. *Organization and Environment*, 33(3), 384–407. <https://doi.org/10.1177/1086026619854217>
- Schrepp, M. (2020). On the Usage of Cronbach's Alpha to Measure Reliability of UX Scales. In *Journal of Usability Studies* (Vol. 15).
- Schumacker, R. E., & Lomax, R. G. (2004). *A beginner's guide to structural equation modeling*.
- Seth, A. & Thomas, H. (1994). Theories of the firm: implications for research. *J. Manag. Stud.* 31(2), 165-191
- Sezen, B., & Çankaya, S. Y. (2013). Effects of Green Manufacturing and Eco-innovation on Sustainability Performance. *Procedia - Social and Behavioral Sciences*, 99, 154–163. <https://doi.org/10.1016/j.sbspro.2013.10.481>
- Shackman, J. D. (2013). The use of partial least squares path modeling and generalized structured component analysis in international business research: A literature review. *International Journal of Management*, 30(3), 78.
- Sharma, A., & Iyer, G. R. (2012). Resource-constrained product development: Implications for green marketing and green supply chains. *Industrial Marketing Management*, 41(4), 599-608. *management*, 91, 102648. *Business Governance and Ethics*, 3(1), 56-76.
- Sharma, S., Starik, M., & Husted, B. (Eds.). (2007). *Organizations and the sustainability mosaic: Crafting long-term ecological and societal solutions*. Northampton, England: Edward Elgar.
- Shmueli, G., Sarstedt, M., Hair, J. F., Cheah, J.-H., Ting, H., Vaithilingam, S., & Ringle, C. M. (2019). Predictive model assessment in PLS-SEM: guidelines for using PLSpredict. *European Journal of Marketing*.
- Shrivastava, P. (1995). Ecocentric management for a risk society. *Academy of management review*, 20(1), 118-137.

- Shulga, L. V., & Busser, J. A. (2020). Hospitality employee and customer role in value co-creation: Personal, organizational and collaborative outcomes. *International journal of hospitality management*, 91, 102648
- Simões-Coelho, M. F., & Figueira, A. R. (2021). Why do companies engage in sustainability? Propositions and a framework of motivations. *BAR-Brazilian Administration Review*, 18.
- Singaraju, S. P., Nguyen, Q. A., Niininen, O., & Sullivan-Mort, G. (2016). Social media and value co-creation in multi-stakeholder systems: A resource integration approach. *Industrial Marketing Management*, 54, 44–55. <https://doi.org/10.1016/j.indmarman.2015.12.009>
- Soper, D S. (2015). A-priori sample size calculator for multiple regression [Software]. Available from [Http://www. danielsoper. Com/Statcalc](Http://www.danielsoper.Com/Statcalc) (20/11/2017).
- Soper, D S. (2019). A-priori sample size calculator for structural equation models [Software] 2013.
- Starik, M., & Kanashiro, P. (2013). Toward a Theory of Sustainability Management: Uncovering and Integrating the Nearly Obvious. *Organization & Environment*, 26(1), 7–30. <https://doi.org/10.1177/108602661247495>
- Strand, R., Freeman, R. E., & Hockerts, K. (2015). Corporate Social Responsibility and Sustainability in Scandinavia: An Overview. In *Journal of Business Ethics* (Vol. 127, Issue 1, pp. 1–15). Kluwer Academic Publishers. <https://doi.org/10.1007/s10551-014-2224-6>
- Stubbs, W. & Cocklin, C. (2008) Conceptualizing a ‘sustainability business model’. *Organization & Environment*, 21(2), 103–127 Retrieved from <https://doi.org/10.1177%2F1086026608318042>
- Tabachnick, B. G., & Fidell, L. S. (1996). Using Multivariate Statistics 3rd edition Harper Collins. *New York*.
- Singh Takhar, S., & Liyanage, K. (2021). Realignment of Product Stewardship towards Chemical Regulations, the Circular Economy and Corporate Social Responsibility-a Delphi Study. *Operations and supply chain management*, 14(3), 368–386.
- Tan, C. S., Ooi, H. Y., & Goh, Y. N. (2017). A moral extension of the theory of planned behavior to predict consumers’ purchase intention for energy-efficient household appliances in Malaysia. *Energy Policy*, 107, 459-471.
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach’s alpha. In *International journal of medical education* (Vol. 2, pp. 53–55). <https://doi.org/10.5116/ijme.4dfb.8dfd>

- Tinsley, H. E., & Tinsley, D. J. (1987). Uses of factor analysis in counseling psychology research. *Journal of Counseling Psychology*, 34(4), 414.
- Torres, A., Bijmolt, T. H., Tribó, J. A., & Verhoef, P. (2012). Generating global brand equity through corporate social responsibility to key stakeholders. *International journal of research in marketing*, 29(1), 13-24.
- Tura, N., Keränen, J., & Patala, S. (2019). The darker side of sustainability: Tensions from sustainable business practices in business networks. *Industrial Marketing Management*, 77, 221–231. <https://doi.org/10.1016/j.indmarman.2018.09.002>
- Van der Werff, E., Thogersen, J., de Bruin, W. B., 2018. Changing household energy usage: the downsides of incentives and how to overcome them. *IEEE Power and Energy Mag.* 16(1), 42-48. Retrieved from <https://doi.org/10.1109/MPE.2017.2759884>
- Van Marrewijk, M. (2003). Concepts and definitions of CSR and corporate sustainability: Between agency and communion. *Journal of business ethics*, 44(2-3), 95-105.
- Voorhees, C. M., Brady, M. K., Calantone, R., & Ramirez, E. (2016). Discriminant validity testing in marketing: an analysis, causes for concern, and proposed remedies. *Journal of the Academy of Marketing Science*, 44(1), 119–134. <https://doi.org/10.1007/s11747-015-0455-4>
- Wagner, M. (2007). Integration of environmental management with other managerial functions of the firm: empirical effects on drivers of economic performance. *Long Range Planning*, 40(6), 611–628. Retrieved from <https://doi.org/10.1016/j.lrp.2007.08.001>
- Walker, P. H., Seuring, P. S., Sarkis, P. J., & Klassen, P. R. (2014). Sustainable operations management: recent trends and future directions. *International Journal of Operations & Production Management*, 34(5). <https://doi.org/10.1108/ijopm-12-2013-0557>
- Wallis, A. M. (2006). Sustainability indicators: is there consensus among stakeholders? *International journal of environment and sustainable development*, 5(3), 287-296
- Wang, Z., Wang, X., & Guo, D. (2017). Policy implications of the purchasing intentions towards energy-efficient appliances among China's urban residents: Do subsidies work? *Energy Policy*, 102, 430-439.
- Wang, Z., Zhang, B., & Li, G. (2014). Determinants of energy-saving behavioral intention among residents in Beijing: Extending the theory of planned behavior. *Journal of Renewable and Sustainable Energy*, 6(5), 053127.

- Warhurst, P. A. (2002). *Mining, Minerals and Sustainable Development Sustainability Indicators and Sustainability Performance Management*. [www.wbs.warwick.ac.uk/ccu/](http://www.wbs.warwick.ac.uk/ccu/)
- Webb, D., Soutar, G. N., Mazzarol, T., & Saldaris, P. (2013). Self-determination theory and consumer behavioural change: Evidence from a household energy-saving behaviour study. *Journal of Environmental Psychology*, 35, 59-66.
- Weerawardena, J., & O'Cass, A. (2004). Exploring the characteristics of the market-driven firms and antecedents to sustained competitive advantage. *Industrial marketing management*, 33(5), 419-428.
- Wells, P. (2016). Economies of scale versus small is beautiful: A business model approach based on architecture, principles and components in the beer industry. *Organization & Environment*, 29(1), 36-52.
- Williams, C. (2007). Research Methods. In *Journal of Business & Economic Research-March* (Vol. 5).
- Williamson, D., Lynch-Wood, G., & Ramsay, J. (2006). Drivers of environmental behaviour in manufacturing SMEs and the implications for CSR. *Journal of Business Ethics*, 67(3), 317–330. <https://doi.org/10.1007/s10551-006-9187-1>
- York, J. G., & Ventakaraman, S. (2010) The entrepreneur-environment nexus: uncertainty, innovation and allocation. *Journal of Business Venturing*, 25, 449-463.
- Yusof, N. A., & Mohd Shafiei, M. W. (2011). Factors affecting housing developers' readiness to adopt innovative systems. *Housing Studies*, 26(03), 369-384.
- Zhang, Y., Sun, J., Yang, Z., & Wang, Y. (2020). Critical success factors of green innovation: Technology, organization and environment readiness. *Journal of Cleaner Production*, 264. <https://doi.org/10.1016/j.jclepro.2020.121701>
- Zott, C., Amit, R., & Massa, L. (2011). The business model: Recent developments and future research. *Journal of Management*, 37(4), 1019–1042. <https://doi.org/10.2139/ssrn.1674>

## APPENDICES

### Appendix A

Table 19 Summary of research methodology

Research Paradigm	Positivist

Research Approach	Quantitative Approach
Research strategy	Survey
Research Instrument	Questionnaire
Population of Interest	SMEs in Ghana (Greater Accra Region)
Sample Size	217 Owner manager and Managers
Data Analyses	Smart PLS3 software and Microsoft Excel: Demographic data Assessment of measure model Common method variance Mean, Standard deviation, Correlation analysis, Direct effect Indirect effect

*Source: Author's processing from Smart pls3 software*

Table 20 Base data for thesis

<b>Data file Settings</b>	
Data file	Thesis Data
Missing value marker	None
<b>Data Setup Settings</b>	
Algorithm to handle missing data	Mean Replacement
Weighting Vector	-
<b>PLS Algorithm Settings</b>	
Data metric	Mean 0, Var 1
Initial Weights	1.0
Max. number of iterations	300
Stop criterion	7

Use Lohmoeller settings?	No
Weighting scheme	Path
<b>Construct Outer Weighting Mode Settings</b>	
BCD	Automatic
BMFS	Automatic
ECO	Automatic
ENV	Automatic
IC	Automatic
MR	Automatic
MR*BMFS	Automatic
RBV	Automatic
SOC	Automatic
SP	Automatic
VC	Automatic
VP	Automatic

*Source: Author's processing from Smart pls3 software*

Table 21 Summary of descriptives statistics

	Mean	Median	Min	Max	Standard Deviation	Excess Kurtosis	Skewness
<b>ECO1</b>	5.915	6.000	1.000	7.000	0.940	7.364	-2.331
<b>ECO2</b>	6.020	6.000	1.000	7.000	0.972	9.132	-2.414
<b>ECO3</b>	6.002	6.000	2.000	7.000	0.897	5.624	-1.739
<b>ECO4</b>	5.969	6.000	1.000	7.000	1.104	6.248	-2.128
<b>ENV1</b>	6.113	7.000	1.000	7.000	1.688	3.093	-2.032
<b>ENV2</b>	6.490	7.000	2.000	7.000	1.064	7.417	-2.727
<b>ENV3</b>	6.019	7.000	2.000	7.000	1.538	1.643	-1.672
<b>ENV4</b>	6.020	6.000	1.000	7.000	1.304	3.587	-1.830
<b>IC1</b>	5.532	6.000	1.000	7.000	1.209	1.327	-0.808
<b>IC2</b>	5.371	5.000	1.000	7.000	1.251	1.256	-0.661
<b>IC3</b>	5.432	5.000	2.000	7.000	1.201	-0.605	-0.255
<b>MR1</b>	5.773	6.000	1.000	7.000	1.100	6.567	-2.247
<b>MR2</b>	6.153	6.000	3.000	7.000	0.953	2.401	-1.450
<b>MR3</b>	6.102	6.000	4.000	7.000	0.821	0.839	-0.982
<b>MR4</b>	5.992	6.000	1.000	7.000	1.016	8.074	-2.190
<b>RBV1</b>	5.864	6.000	1.000	7.000	1.076	6.661	-2.175
<b>RBV2</b>	5.922	6.000	2.000	7.000	0.983	3.394	-1.516
<b>RBV3</b>	6.019	6.000	2.000	7.000	0.853	0.856	-0.891
<b>RBV4</b>	5.912	6.000	2.000	7.000	0.965	1.632	-1.196
<b>SOC1</b>	6.125	6.000	2.000	7.000	0.936	4.672	-1.670
<b>SOC2</b>	6.200	6.000	3.000	7.000	0.832	2.188	-1.185
<b>SOC3</b>	6.075	6.000	2.000	7.000	0.793	10.169	-2.283
<b>SOC4</b>	6.078	6.000	3.000	7.000	0.866	4.073	-1.658
<b>VC1</b>	5.832	6.000	3.000	7.000	0.844	1.512	-1.081
<b>VC2</b>	5.832	6.000	3.000	7.000	0.844	1.512	-1.081
<b>VC3</b>	5.819	6.000	1.000	7.000	1.078	7.831	-2.320
<b>VC4</b>	5.819	6.000	1.000	7.000	1.078	7.831	-2.320
<b>VP1</b>	5.620	6.000	2.000	7.000	1.011	4.074	-1.870



<b>VP2</b>	5.798	6.000	3.000	7.000	0.824	1.618	-1.030
<b>VP3</b>	5.827	6.000	3.000	7.000	0.809	2.217	-1.195
<b>VP4</b>	5.886	6.000	3.000	7.000	0.763	3.112	-1.298
<b>VP5</b>	5.937	6.000	2.000	7.000	0.690	2.885	-0.974

*Source: Author's processing from Smart pls3 software*

Appendix B:

**Consequences of incorporating sustainability business models into operations of small and medium-sized firms in Ghana.**

Dear Sir/Madam,

I wish to request your participation in this research project kindly. This research instrument is designed to determine how business models designed for sustainability can impact firms' sustainability performance. I wish to assure you that the purpose of the research is academic work, and any information provided by participants will be treated with the utmost confidentiality and anonymity. You are also informed that participation is voluntary, and no right or wrong answer exists. Please know that it will take approximately 10-15 minutes of your time.

Thank you for your assistance.

**SECTION A: Demographic Information**

Please tick the appropriate answer.

1. **Sex:** a. Male [ ] b. Female [ ]
2. **Age:** a. below 20 years [ ] b. 20-25 years [ ] c. 26-30 years [ ] d. 31-35 years [ ]  
e. 36-40 years [ ] f. Above 40 years [ ]
3. **Educational level:** a. Diploma [ ] b. Degree [ ] c. Post Graduate
4. What is your position in the organization: Owner Manager [ ] Manager [ ]  
4b. If manager, kindly indicate your level: Lower [ ] Middle [ ] Senior [ ]
5. **Years of experience working with the SME:** a. Less than 1 year [ ] b. 1-5 [ ] c. 6-10 years [ ] d. 11-15 years [ ] e. 20-25 years [ ] f. More than 25 years [ ]
6. **Nature of Business:** Service [ ] Agriculture [ ] Manufacturing/Production [ ]  
Construction [ ] Trading [ ]
7. **Age of business:** a. Less than 1 year [ ] b. 1-5 [ ] c. 6-10 years [ ] d. 11-15 years [ ] e. 20-25 years [ ] f. More than 25 years [ ]
8. **Size of SME:** a. Small (6-30 employees) [ ] b. Medium-sized (31-100 employees) [ ]  
c. Large (over 100 employees)

9. **Target market or segmentation:** Consumer markets [ ] Business markets[ ] Government markets[ ]

10. Does your SME consciously incorporate sustainability strategies? Yes [ ] No [ ]

**SECTION B**

Please indicate the extent of Agreement. Where 1 = Least in Agreement and 7 = Highest in Agreement

<b>Statements</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>BMS</b>							
<i>VP</i>							
Our products should be in line with the demands of existing customers.							
We should aim for products that address the problems of our customers.							
We should constantly seek new customers for our products and services.							
We should regularly utilize distribution channels that support our customers.							
We should maintain customers by addressing the needs of our target markets.							
<i>VC</i>							
We should ensure that we provide our customers with quality products.							
We should support our customers before, during, and after-sales.							
We should offer competitive product prices to our customers.							
<b>FSP</b>							
<i>ECO</i>							
We may increase our annual sales if we are sustainable.							

We may avoid regulatory fines if we are sustainable.							
We may increase our investments in R&D if we are sustainable.							
We may save on costs by being sustainable.							
<b>ENV</b>							
We should reduce our packaging materials.							
We should reduce our energy consumption.							
We should focus on using renewable resources.							
We should have specific strategies for protecting the environment.							
<b>SOC</b>							
We should recruit people from the community.							
We should ensure employee empowerment.							
We should create opportunities for both internal and external communication.							
<b>BCD</b>							
<b>RBV</b>							
We think integrity is a core feature of our relationship with our stakeholders.							
We perceive that we have a reputation for competence.							
We think that our stakeholders believe that we are a modern and trendy organization.							
We believe in incorporating elegance and prestige in our offerings.							
<b>IC</b>							

We believe we can develop new products with unique technical specifications and functionalities.							
We perceive that our firm sees creating new products and services as critical tools.							
We perceive that our firm develops in-house solutions to improve our manufacturing processes.							
<b>MR</b>							
We think that even when our products have slightly higher prices (due to sustainability), it would attract customers.							
We think that even when our products have far higher prices (due to sustainability), it would attract customers.							
We think that low-income groups would be interested in buying from us if we are sustainable.							
We think that medium-income groups would be interested in buying from our firm if we are sustainable.							
<b>Challenges</b>							
We think that instituting sustainable business initiatives are expensive.							
We think that instituting sustainable business initiatives requires re-training employees.							
We think that instituting sustainable business initiatives results in complicated stakeholder relationships.							
We think that instituting sustainable business initiatives compete with business goals.							

# LIST OF AUTHOR'S PUBLICATIONS

## Journals

**Owusu Yeboah, A. Y.**, Kwarteng, M. A., & Novak, P. (2023). Social media marketing, value creation and firm's sustainability performance: a study among young consumers. *Aslib Journal of Information Management*.

**Owusu Yeboah, A. Y.**, Jibril, A. B., & Novák, P. (2022). A strategic framework for developing sustainable value propositions. *Problems and Perspectives in Management*.

Boachie-Mensah, F. O. & **Yeboah Owusu, A. Y.** (2015). Environmental dimensions of corporate social responsibility and brand equity. *European Journal of Applied Business Management*, 1 (2), 152-168

## Book chapters and Modules

**Owusu Yeboah, A. Y.**, Kwarteng, M. A., & Novak, P. (2020). Value Creation Through Social Media Marketing: A Threat to Sustainability Performance? In S. K. Sharma, Y. K. Dwivedi, B. Metri, & N. P. Rana (Eds.), *Re-imagining Diffusion and Adoption of Information Technology and Systems: A Continuing Conversation* (Vol. 618, pp. 475–486). Springer International Publishing. [https://doi.org/10.1007/978-3-030-64861-9\\_42](https://doi.org/10.1007/978-3-030-64861-9_42)

**Owusu Yeboah, A. Y.**, Novak, P., Appiah-Nimo, C., (2020). Sustainable entrepreneurship and SME performance. In J. Duda, & T. Bernat (Eds.) *Nauka-Biznes-Gospodarka: Kierunki Wspolpracy*. Science and business common challenges, IV International scientific conference, Szczecin, Poland (Vol.1, pp.157-165). SIZ. DOI:10.26396/SIZ/65766-53-3-29; e-ISBN 978-83-65766-52-6

**Owusu Yeboah, A. Y.** & Yalley, A. A. (2019). Event Management Module. College of distance education, University of Cape Coast.

Eward, N., Ofori, D. & **Owusu Yeboah, A. Y.** (2019) Introduction to project Management. College of distance education, University of Cape Coast.

## Conferences

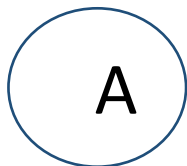
**Owusu Yeboah, A. Y.** (2022). Using Value Propositions as Opportunities for Implementing Sustainability Strategies. In *International Doctoral Seminar*. Slovak University of Technology in Bratislava, Slovakia.

**Owusu Yeboah, A. Y.** & Novak, P. (2020). Business models for sustainability and SMEs' sustainability performance: a conceptual framework. In *DOKBAT-16th International Bata Conference for Ph.D. Students and Young Researchers*. Tomas Bata University in Zlin, Zlin, Czech Republic. <http://hdl.handle.net/10563/45937>

**Owusu Yeboah, A. Y.** & Novak, P. (2020). Business models for sustainability and small and medium enterprises' sustainability performance **Poster Presentation**. Science and Business, Common Challenges, VI International Scientific Conference Szczecin, Poland. June 2020.

**Owusu Yeboah, A. Y.**, Kwarteng, M. A. & Novak, P. (2020). Value creation through social media marketing: a threat to sustainability performance? Re-Imaging diffusion and adoption of information technology and systems: a continuing conversation. IFIP WG8.6 Conference 2020, Tiruchirappalli, India.

## **AUTHOR’S PROFESSIONAL CURRICULUM VITAE**



**Adwoa Yeboaa Owusu Yeboah** [MSc (Project Management), MCom (Marketing), MCIM, PGDE, BCom]

E:[adwoa.yeboah@ucc.edu.gh](mailto:adwoa.yeboah@ucc.edu.gh); [owusu\\_yeboah@utb.cz](mailto:owusu_yeboah@utb.cz)

Department of Marketing and supply Chain Management, University of Cape Coast, Ghana.

Faculty of Management and Economics, Tomas Bata University in Zlin, Zlin, Czech Republic.

---

### **Professional Summary**

Assistant Lecturer with 17 years of experience in teaching at the University level along with proven record of research ability. Dedicated to students' success through creative and innovative curriculum delivery which is mainly student-centred. Motivated to secure an opportunity to apply my experience.

---

### **Work History**

Assistant Lecturer

09/2016 to date

**School of Business** | University of Cape Coast

- Develop and implement lesson plans that cover Marketing, Entrepreneurship, Business Management, and Project Management courses.
- Complete and submit reports to Head of Department detailing course activities and plans.
- Taught four or five undergraduate classes and one post graduate class per semester.
- Maintain in-depth knowledge of my subject areas to facilitate the achievement of optimum academic results among students.
- Provide guidance and support to students to facilitate academic excellence.
- Distribute course syllabus and respond to student questions and concerns regarding standards, material, grading, and progression.

- Maintained regular office hours to help students with questions and provide educational support.
- Integrate technology into classroom instruction including videos and other online content.
- Mark and moderate assignments, exam scripts, and other assessment materials based on tests requirements; assessing students' skills through practical assignments and in-class tests to enhance performance.
- Work with graduate students and teaching assistants on the development of classroom and teaching materials.
- Deliver seminars, tutorials, workshops, and other small group learning activities to develop students' skills and interests.
- Select appropriate support materials to meet student learning needs.
- Develop and deliver professional learning and development programmes.
- Supervise research projects, offering constructive feedback and guidance to produce excellent results.

**Senior / Principal Research Assistant**

**School of Business** | University of Cape Coast

01/2009-08/2016

- Assisted lecturers to administer examinations, assess results and issue fair grades.
- Organised industry-academia conferences and seminars to expose students to the requirements and expectations of industry.
- Assisted lecturers in their research activities.
- Helped students explore concepts through challenging assignments and stimulating class discussions.
- Facilitated workshops, tutorials, and seminars with opportunities to stimulate students' critical thinking and analysis.

**Tutor/Senior Tutor**

**College of Distance Education** | University of Cape Coast

08/ 2007 - Date

- Teach management courses.
- Plan lessons to target subject weaknesses and build skills within strengths.
- Customise tutoring to suit individual competencies, enabling paced academic progression.
- Manage pupil behaviour and set firm boundaries to facilitate efficient lessons.
- Set clear targets and deliver feedback to achieve student goals.
- Develop course modules.



- Assess and grade students' tests performance.

---

## Skills

- |                              |                             |
|------------------------------|-----------------------------|
| • Lecture delivery           | Exam invigilation           |
| • Academic workshop delivery | Tutorial delivery           |
| • Seminar delivery           | Individual academic support |
| • Academic mentoring         | Relevant computer skills    |

---

## Education

**Doctor of Philosophy** | Management and Economics 2020-Date  
**Tomas Bata University in Zlin, Zlin, Czech Republic**

**Master of Science** | Project Management 2018  
**University of Cape Coast, Cape Coast.**

**Master of Commerce** | Marketing 2014  
**University of Cape Coast, Cape Coast.**

**Postgraduate Diploma in Education** | Management 2013  
**University of Cape Coast, Cape Coast.**

**Bachelor of Commerce** | Accounting and Management 2007  
**University of Cape Coast, Cape Coast.**

---

## Professional Qualifications

**MCIM** | Postgraduate Diploma in Professional Marketing 2017  
**Chartered Institute of Marketing, UK**

**ACIM** | Diploma in Professional Marketing 2015  
**Chartered Institute of Marketing, UK**

---

## Affiliations

Chartered Institute of Marketing, Ghana

---

## **Research Projects**

### **Team Leader**

**IGA/FaME/2021/004 SME Innovation Performance, Firm Sustainability Performance, and Influence of Pandemic on Entrepreneurial Well-being.** Tomas Bata University in Zlin, Czech Republic.

### **Team Member**

**IGA/FaME/2023/006 Environmental sustainability orientation, dynamic capability, entrepreneurial orientation, and small and medium-sized enterprises' green innovation.** Tomas Bata University in Zlin, Czech Republic.

---

## **Workshops/Seminars**

- Module Writers' Workshop, College of Distance Education, University of Cape Coast. March 2018.
- Departmental Teaching and Research Seminar, Department of Marketing and Supply Chain Management. January 2018.
- Cape Coast Entrepreneurship and Stakeholders' Forum, Centre for Entrepreneurship and Small Enterprise Development, University of Cape Coast. December 2017.
- 1<sup>st</sup> Academia and Industry Conference, Departments of Management and Marketing and Supply Chain Management, October 2017.
- Workshop on Publication outlets, Researcher visibility and External engagement. Directorate of Research, Innovation & Consultancy, University of Cape Coast, December 2016.
- Entrepreneurship Training Programme, Ghana Investment Promotion Council, Cape Coast. November 2016.

---

## **Committee Assignments**

- Chair, Professional Accreditation Committee for BCom (Marketing), Department of Marketing and Supply Chain Management. August 2018
- Committee for working on Re-accreditation Documents for MCom/MBA (Marketing), Department of Marketing and Supply Chain Management. August 2018
- Committee for working on Re-accreditation Documents of MCom/MBA (Marketing), Department of Marketing and Supply Chain Management. August 2017

- Interviewer, Business Plan Competition, Centre for Entrepreneurship and Small Enterprise Development for National Entrepreneurship and Innovation Plan. June 2018.
- Member, Programme Review Committee, Department of Marketing and Supply Chain Management. February 2017 to date
- Assessor, Inter Faculty Committee on Institutional Affiliation assignments to Affiliated Universities.
- Secretary, School of Business Welfare. School of Business, University of Cape Coast. December 2015 to date.

---

### **Languages**

**Twi** | Native

**English** |Fluent

**Czech** | Basic

Adwoa Yeboaa Owusu Yeboah

**Consequences of incorporating sustainability business models into  
Operations of Small and Medium-Sized Firms in Ghana**

Význam začlenění obchodních modelů udržitelnosti do řízení malých a středních  
firem v Ghaně

Doctoral Thesis

Published by: Tomas Bata University in Zlín,  
nám. T. G. Masaryka 5555, 760 01 Zlín

Edition: 5 pcs

Typesetting by: Adwoa Yeboaa Owusu Yeboah

This work has not undergone any proofreading or editorial review

Publication year: 2023