EUROPEAN BUSINESS UNIVERSITY OF LUXEMBOURG
GRADUATE SCHOOL OF BUSINESS ADMINISTRATION

FACULTY OF BUSINESS

DEPARTMENT OF MANAGEMENT

ASSESSING THE ADAPTATION OF BATSWANA ENTREPRENEURS TO CLIMATE CHANGE: STRATEGIES FOR SUSTAINABLE RESILIENCE AND INNOVATION.

BY SAME ONNEILE OITSILE

STUDENT ID: 22301107

SUPERVISOR: MR B. BASUPI

A THESIS SUBMITTED TO THE DEPARTMENT OF MANAGEMENT IN PARTIAL FULFILMENT OF THEREQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION

DATE: 1st MARCH 2024

Statement of Originality

I, Same Onneile Oitsile hereby declare that this thesis is my original work, and it represents my own research efforts in partial fulfilment of the requirements for the Degree of Master of Business Administration. All ideas, concepts, and findings presented herein are the result of my independent scholarly work, conducted under the guidance of my supervisor.

I acknowledge that any contributions made by others to this work, such as ideas, data, or language, are duly credited through proper citations in the bibliography and references. Where collaboration or consultations occurred, the extent of each contribution is explicitly mentioned.

I confirm that this thesis has not been submitted for any other degree or qualification at any other institution. Any sources of information used in this thesis, including but not limited to published works, articles, or data, are appropriately cited.

I understand the importance of academic integrity and the consequences of plagiarism. Therefore, I affirm that this thesis is an original piece of work that adheres to the ethical standards and guidelines of the European Business University.

Date: 01/March/2024

(Same Onneile Oitsile)

Dedication

I dedicate this thesis to my mother:

In every chapter of my academic journey, your relentless support has been the constant narrative. Your sacrifices, encouragement, and love have been my guiding lights, illuminating the path to this achievement. This thesis is not just a testament to my academic hard work but a tribute to the incredible woman who has been my source of strength. Thank you for being my anchor and inspiration. This one's for you, Mom.

With all my love,

Same

Acknowledgements

First and foremost, I would like to express my sincere appreciation to my supervisor, Mr Biki Basupi, whose invaluable insights and constructive feedback greatly enriched the quality of this research. Your mentorship has been a guiding force throughout this academic journey.

I am thankful for the support of my friends and family, especially my siblings, parents and uncles, for their constant encouragement, understanding, and belief in my capabilities. Your sacrifices and love have been my driving force.

Heartfelt thanks to my friends Onthatile Machacha and Boitumelo Cornelius-Moloi who provided encouragement and mutual support during both the challenging and rewarding moments of this undertaking.

Finally, I extend my gratitude to all the participants and contributors who willingly shared their time and insights, contributing significantly to the depth and breadth of this study.

This thesis is a culmination of collective support and encouragement, and I am truly grateful for the privilege to express my appreciation.

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MAIN TEXT

The main objective of this thesis is to provide a comprehensive understanding of sustainable entrepreneurship's role in addressing climate change and sustainability challenges. It aims to shed light on the motivations, strategies, challenges, and impacts of sustainable entrepreneurship ventures and offer practical insights for entrepreneurs, policymakers, and investors interested in promoting sustainability and resilience in the face of the climate crisis in Botswana.

ABSTRACT

Climate change poses a global challenge, demanding comprehensive responses to safeguard environmental sustainability, economic stability, and societal well-being. In the context of emerging economies like Botswana, where the impacts of climate change are pronounced, understanding how entrepreneurs navigate and adapt to this challenge becomes paramount. This study aims to address the existing knowledge gap by assessing the adaptation strategies of Batswana entrepreneurs, focusing on their innovative and sustainable approaches. Drawing insights from diverse sources such as the IPCC, UNDP, Shane, Zahra, EAC, GIZ, Wang & Bansal, UNEP, and WEF, the research outlines the specific geographical and economic context of Botswana.

*This research transcends academic realms, holding practical implications for policymakers, development agencies, and stakeholders**.** While global insights inform the study, its primary focus is on Botswana, contributing to the understanding of the unique challenges and opportunities faced by Batswana entrepreneurs in the context of climate change. Through a quantitative approach, data were collected using a structured questionnaire from a diverse sample of 114 entrepreneurs in Botswana. A descriptive and correlational research design was adopted, utilizing inferential statistics for data analysis. The Data from the findings was supposed to be analysed using IBM SPSS version 20, but Google forms automatically analysed it.*

The research objectives were to analyse awareness levels, evaluate adaptation strategies, and identify barriers to effective adaptation. By addressing these objectives, the research not only contributes to the academic discourse on climate change adaptation and entrepreneurship but also offers practical implications for policymakers, development agencies, and entrepreneurs in Botswana. Findings reveal a high level of awareness among entrepreneurs, yet significant challenges in translating awareness into action. Financial constraints, unclear government policies, and limited access to information were identified as primary barriers. Despite challenges, entrepreneurs express willingness to adopt innovative and sustainable practices. Government policies and support structures are perceived as needing improvement to promote climate change resilience. The study concludes with recommendations for collaborative efforts to address barriers and support entrepreneurship in effectively adapting to climate change in Botswana. Overall, the study highlights the urgent need for collaborative efforts to address barriers and support entrepreneurship in effectively adapting to climate change in Botswana.

Keywords: Adaptation, Botswana Entrepreneurs, Climate Change, Sustainable Resilience, Innovation, Strategies

CHAPTER ONE: INTRODUCTION

1.1 BACKGROUND INFORMATION

Climate change represents one of the most pressing global challenges of our time, with far-reaching consequences for the environment, economies, and societies. In recent years, its impacts have reverberated across the world, affecting various aspects of socio-economic development. Its pervasive influence on socio-economic development, particularly within emerging economies, underscores its significance as a critical issue demanding comprehensive understanding and effective responses (UNDP, 2020). Within this complex landscape, the intersection of entrepreneurship and climate change adaptation has emerged as a focal point in the global discourse, highlighting entrepreneurs as key agents capable of crafting innovative solutions and fostering resilience amidst environmental challenges (Shane, 2003; Zahra et al., 2006).

In Europe and North America, countries have actively embraced the global climate agenda, recognizing the indispensable role of businesses and entrepreneurs in achieving climate neutrality (European Commission, 2019). Studies, such as those by Osiel González Dávila et al. (2020), delve into the adaptation strategies of entrepreneurs facing climate-related challenges in the United States. However, despite the growing global awareness of climate change and its far-reaching implications, the nuanced impact on the entrepreneurial landscape in Botswana, a landlocked nation in Southern Africa, remains inadequately explored (IPCC, 2018; UNDP, 2020).

Botswana's Vulnerability to Climate Change:

Botswana's vulnerability to the adverse impacts of climate change is exacerbated by its predominantly arid and semi-arid climate conditions (IPCC, 2018; UNDP, 2020). The potential ramifications of climate change, including water scarcity, droughts, and desertification, pose direct challenges to sectors vital for the nation's economic stability, particularly agriculture (UNDP, 2020). This unique intersection of climate vulnerability and economic dependence on sectors susceptible to climate change sets the stage for an in-depth exploration of how Batswana entrepreneurs are navigating this dynamic landscape.

Entrepreneurship as a Driver of Innovation:

Entrepreneurship, recognized globally as a driver of economic growth and development, plays a crucial role in fostering innovation and resilience in the face of environmental challenges (Shane, 2003; Zahra et al., 2006). Despite the growing awareness of climate change and its potential threats to the business environment, limited empirical research exists on the specific adaptation strategies employed by Batswana entrepreneurs to mitigate risks and harness opportunities (EAC, 2019; GIZ, 2021). Understanding these strategies is essential for fostering sustainable resilience and innovation in the local entrepreneurial ecosystem, particularly given Botswana's active promotion of entrepreneurship as a diversification strategy (Wang & Bansal, 2012; Zahra et al., 2014).

Research Gap and Urgency:

The urgency to comprehend how Batswana entrepreneurs respond to climate change is underscored by the need to foster sustainable resilience and innovation within the local entrepreneurial ecosystem (Wang & Bansal, 2012; Zahra et al., 2014). This research aims to bridge a conspicuous gap in empirical knowledge, examining the vulnerability of Botswana's arid and semi-arid regions to climate-induced disruptions and the consequential threats to its economy, focusing on adaptation strategies (IPCC, 2018). The research digs deep into uncovering how Batswana entrepreneurs navigate climate-induced disruptions across all sectors. By placing the research problem within the broader international context of climate agreements and sustainable development goals, this study contributes not only to the understanding of local entrepreneurship but also to the broader discourse on sustainable development (UNFCCC, 2015; UN, 2015).

Botswana's International Commitments:

Recognizing Botswana's participation in global climate agreements, including the Paris Agreement, this research underscores the alignment of the nation's climate change mitigation and adaptation efforts with the United Nations' Sustainable Development Goals, particularly Goal 13 (Climate Action) (UNFCCC, 2015; UN, 2015). The study will contribute not only to academic inquiry, but also to practical implications for policymakers, development agencies, and stakeholders, providing a foundation for targeted interventions and support mechanisms (UNEP, 2020; WEF, 2021). By doing so, it endeavours to enhance the resilience and adaptive

capacity of Batswana entrepreneurs, ultimately contributing to the nation's sustainable development goals and its commitment to global climate action.

Therefore, this MBA study sets out to assess the adaptation strategies of Batswana entrepreneurs to climate change, aiming to uncover innovative and sustainable approaches that contribute to the resilience of businesses and the general economic development of the country. The research will dig deep into the challenges faced by entrepreneurs due to climate change, explore the barriers to effective adaptation, and identify best practices and innovative solutions adopted by successful entrepreneurs in Botswana. Drawing from a comprehensive array of sources, including IPCC, UNDP, Shane, Zahra, EAC, GIZ, Wang & Bansal, UNEP, and WEF, this study is grounded in the specific geographical and economic context of Botswana, extending beyond academic inquiry to address practical implications for sustainable development.

1.2 PROBLEM STATEMENT

Climate change, recognized as a global challenge of unprecedented proportions, has profound implications for the environment, economies, and societies across the world (IPCC, 2018). In recent years, climate change has emerged as a formidable challenge globally, affecting various aspects of socio-economic development, particularly within emerging economies worldwide. Globally, the severity of climate change is underscored by the Intergovernmental Panel on Climate Change (IPCC, 2018) and the United Nations Development Programme (UNDP, 2020). As the impacts cascade worldwide, the link between entrepreneurship and climate change adaptation has gained significance among academics. The global discourse on climate change adaptation has increasingly acknowledged the pivotal role of entrepreneurship in fostering innovation and resilience amidst environmental challenges (Shane, 2003; Zahra et al., 2006). Entrepreneurs are recognized as key agents capable of not only adapting to the evolving climate but also leading in crafting solutions that mitigate its impacts and harness opportunities within this dynamic landscape (Zahra, Gedajlovic, Neubaum, & Shulman, 2009). Owing to this, several studies have been carried out to explore the relationship between climate change and entrepreneurship.

In the broader international context, various countries, including those in Europe and North America, have embraced the global climate agenda. In Europe, initiatives like the European

Green Deal have emphasized the contribution of businesses and entrepreneurs to achieving climate neutrality (European Commission, 2019). The emphasis on sustainability in entrepreneurial activities has been a notable focus, with studies exploring how entrepreneurs adapt to the challenges posed by changing climatic conditions. Osiel González Dávila et al. (2020), in a study conducted in North America, specifically the United States, investigated the adaptation strategies employed by entrepreneurs facing climate-related challenges. The findings of these studies underscore the proactive role of entrepreneurs in crafting solutions to mitigate the impacts of climate change while harnessing emerging opportunities.

While global discourse has addressed the climate change and entrepreneurship connection, there are also a few studies within Sub-Saharan Africa. Notably, research efforts within this region have begun to shed light on the intricate relationship between climate change and entrepreneurial activities. In South Africa, a study by Mabuza et al. (2019) explored the adaptation strategies of entrepreneurs facing climate-related challenges. The study highlighted the significance of diversification and technology adoption as key adaptive measures, particularly in the agricultural sector. In Kenya, a study conducted by Adefolalu et al. (2017) delved into the challenges hindering climate change adaptation among entrepreneurs. The research identified barriers such as limited access to finance, inadequate infrastructure, and regulatory hurdles. These findings suggest that the challenges faced by entrepreneurs in adapting to climate change are multifaceted and context-specific within Sub-Saharan Africa.

In the broader context of climate change adaptation, studies in Nigeria by Zahra et al. (2016) emphasized the importance of sustainable land management practices. Entrepreneurs were found to adopt measures to preserve soil fertility and combat desertification. This insight aligns with the global perspective on sustainable land management as a crucial component of climate resilience (UNCCD, 2019). Despite these commendable efforts, comprehensive research specifically focusing on Botswana is limited within the Sub-Saharan Africa context. Existing studies in Botswana, such as those by the Environmental Affairs Department (EAC, 2019) and the German Corporation for International Cooperation (GIZ, 2021), touch upon the vulnerability of SMEs and adaptation strategies employed by entrepreneurs. However, a more nuanced exploration is needed to consider the unique contextual factors influencing entrepreneurial activities in Botswana and Sub-Saharan Africa at large.

These studies collectively underscore the diverse challenges and adaptive strategies employed by entrepreneurs across Sub-Saharan Africa, providing valuable insights that contribute to the

growing understanding of the climate change and entrepreneurship dynamics in the region. While the global discourse on climate change and entrepreneurship has gained traction, studies reveal that the existing literature on climate change and entrepreneurship in Botswana highlights a scarcity of comprehensive studies addressing the nuanced dynamics of this relationship. While some studies have explored specific aspects, such as the vulnerability of SMEs and adaptation strategies, they often lack in-depth examinations of the socio-economic, cultural, and policy dimensions shaping entrepreneurial responses to climate change in the country. For instance, Hambira (2017) conducted a study on "Tourism operators' and policymakers' perceptions and responses to the tourism-climate change nexus in Botswana", focusing on vulnerabilities and adaptations in the Maun and Tsabong areas. While this study offers insights into climate change impacts on the tourism sector, it represents a limited geographical scope and does not comprehensively cover entrepreneurship across various sectors.

Similarly, Saarinen et al. (2012) examined "the reaction of the tourism industry to climate change in the Kgalagadi South District of Botswana", providing valuable insights into sector-specific challenges and adaptation strategies. However, the study's focus on a specific region and industry sector limits its generalizability to the broader entrepreneurial landscape in Botswana. Furthermore, Hambira et al. (2013) investigated "climate change adaptation practices in nature-based tourism in Maun in the Okavango Delta area", emphasizing the preparedness of tourism businesses. While this study sheds light on adaptation strategies within a specific sector, it does not dig deep into the broader entrepreneurial ecosystem or consider other industries vulnerable to climate change. These studies illustrate the existing gaps in the literature, emphasizing the need for more comprehensive research that explores the multifaceted interactions between climate change and entrepreneurship across diverse sectors and geographical regions in Botswana.

Existing research, though limited, offers valuable insights into the challenges and responses of entrepreneurs in the face of climate change in the context of this Southern African nation. One notable study by the Environmental Affairs Department (EAC, 2019) in Botswana explored the impact of climate change on small and medium enterprises (SMEs). The study emphasized the vulnerability of SMEs to climate-induced disruptions, particularly in sectors like agriculture and tourism. Findings highlighted the need for tailored interventions to enhance the resilience of these enterprises. Another noteworthy contribution is from the German Corporation for International Cooperation (GIZ, 2021), which conducted a comprehensive assessment of

climate change adaptation strategies among entrepreneurs in Botswana. The study delved into the specific measures entrepreneurs employ to adapt to changing climatic conditions, emphasizing the role of innovation and sustainable practices. The findings underscored the importance of government support and the need for capacity-building initiatives.

Despite these efforts, it is evident that the nuanced dynamics of climate change and entrepreneurship in Botswana have not been adequately explored. The existing studies touch upon the vulnerability of SMEs and adaptation strategies employed by entrepreneurs but fall short of providing an in-depth exploration of the socio-economic, cultural, and policy dimensions shaping entrepreneurial responses to climate change in the Botswana context (Hambira, 2017). Therefore, while available studies acknowledge the challenges faced by entrepreneurs and highlight some adaptation strategies, there is a need for more comprehensive research that considers the unique contextual factors influencing entrepreneurial activities in Botswana. This research aims to fill this gap by providing a more detailed and nuanced understanding of the relationship between climate change and entrepreneurship in the Botswana context.

1.3 RESEARCH AIMS:

The aim of this research is to Assess the Adaptation of Batswana Entrepreneurs to Climate Change: Strategies for Sustainable Resilience and Innovation

1.4 RESEARCH OBJECTIVES:

1. To analyse the current level of awareness among Batswana entrepreneurs regarding climate change.
2. To evaluate the existing adaptation strategies employed by Batswana entrepreneurs in response to climate change.
3. To explore and identify the barriers hindering effective climate change adaptation among entrepreneurs in Botswana.

1.5 RESEARCH QUESTIONS:

1. What is the current level of awareness among Batswana entrepreneurs regarding climate change?
2. What are the current adaptation strategies implemented by Batswana entrepreneurs to mitigate the impacts of climate change on their businesses?

3. What are the primary challenges and barriers faced by Batswana entrepreneurs in successfully adapting to climate change, and how do these vary across different sectors?

1.6 HYPOTHESIS:

H0 (Null Hypothesis): The current adaptation strategies employed by Batswana entrepreneurs do not significantly contribute to sustainable resilience and innovation in the face of climate change.

H1 (Alternative Hypothesis): The current adaptation strategies employed by Batswana entrepreneurs significantly contribute to sustainable resilience and innovation in the face of climate change.

1.7 SIGNIFICANCE OF THE STUDY

This study investigates the critical relationship between climate change and entrepreneurship in Botswana, a region vulnerable to environmental challenges. Focusing on adaptation strategies, the research aims to uncover how Batswana entrepreneurs navigate climate-induced disruptions across all sectors. The study contributes empirical knowledge, enriching theoretical frameworks in the context of Botswana's unique challenges. With practical implications, it informs policymakers, aids development agencies, and empowers local stakeholders. By aligning with international climate commitments, the study fosters entrepreneurial resilience, innovation, and sustainable development, emphasizing the interconnectedness of global and local efforts in addressing climate change.

1.8 SCOPE OF THE STUDY

The scope of this MBA study is designed to comprehensively assess the adaptation strategies of Batswana entrepreneurs to climate change. The study focuses on Botswana, a landlocked nation in Southern Africa, renowned for its predominantly arid and semi-arid climate conditions. The specific geographical and economic context of Botswana forms the nucleus of the research, with an emphasis on understanding how climate change impacts intersect with entrepreneurial activities in the region. The study aims to uncover innovative and sustainable approaches that contribute to the resilience of businesses and the overall economic development of the country, given its centrality to the nation's economy and its susceptibility to climate change impacts (UNDP, 2020). It aims to unearth specific challenges and

opportunities faced by entrepreneurs engaged in agriculture and related activities. While the study endeavours to provide a comprehensive understanding, certain limitations are acknowledged. These include constraints on resources, potential challenges in data accessibility, and the dynamic nature of both climate change and entrepreneurial activities. By delineating these specific parameters, the scope of this study is tailored to deliver insights into the adaptation strategies of Batswana entrepreneurs to climate change, contributing value. Therefore, these findings will help readers to understand how they adapt to these conditions. A questionnaire, which was arranged in a logical manner so as to help the respondents to respond to, without the aid of an interviewer, was emailed and sent via WhatsApp to respondents.

1.9 CONCEPTUALIZATION

Definition of key terms:

1. Adaptation:

The process of adjusting and responding to the challenges posed by climate change to minimize adverse effects and harness opportunities-IPCC. (2018). Special Report on Global Warming of 1.5°C.

2. Botswana Entrepreneurs:

Individuals in Botswana engaged in activities related to designing, launching, and running new businesses, emphasizing innovation and economic development. -Ministry of Investment, Trade, and Industry, Botswana. (2020). "National Entrepreneurship Policy."

3. Climate Change:

Long-term changes in temperature, precipitation, and other atmospheric conditions, primarily caused by human activities, leading to environmental shifts. - IPCC. (2018). Special Report on Global Warming of 1.5°C.

4. Sustainable Resilience:

The capacity of entrepreneurs to withstand, recover from, and adapt to climate-related challenges in a manner that promotes long-term environmental, social, and economic sustainability - Wang, S., & Bansal, P. (2012). "Social Responsibility in New Ventures: Profiting from a Long-Term Orientation."

5. Innovation:

The introduction of new ideas, products, processes, or services that bring about positive change and enhance competitiveness. - Shane, S. (2003). "A General Theory of Entrepreneurship: The Individual-Opportunity Nexus."

6. Strategies:

Planned and purposeful actions taken by entrepreneurs to achieve specific goals in response to climate change, fostering adaptability and sustainability. - Zahra, S. A., et al. (2016). "Dynamic Capabilities and Organizational Agility: Risk, Uncertainty, and Strategy in the Innovation Economy."

1.10 CHAPTER SUMMARY

This chapter introduces a comprehensive study on the adaptation strategies of Batswana entrepreneurs to climate change, recognizing the global significance of this challenge. The research problem is articulated, emphasizing the urgent need to explore how Batswana entrepreneurs respond to climate change. The chapter outlines research objectives, questions, and the international and regional context of Botswana's commitments to sustainable development and climate action. It emphasizes the practical implications of bridging knowledge gaps, aiming to enhance the resilience of Batswana entrepreneurs and contribute to the broader discourse on sustainable development.

CHAPTER TWO: LITERATURE REVIEW

2.1 INTRODUCTION

Botswana, a landlocked nation situated in Southern Africa, boasts a unique landscape marked by its arid and semi-arid climate conditions. While endowed with diverse natural resources and a relatively stable economy, the country faces a complex set of challenges, including the adverse impacts of climate change. Understanding the broader context and the specific challenges posed by climate change in Botswana is essential for appreciating the significance of the research problem.

Climate Change Vulnerability in Botswana:

Geographical Factors: Botswana's geography plays a pivotal role in its vulnerability to climate change. The nation is predominantly covered by arid and semi-arid regions, making it highly susceptible to water scarcity, droughts, and desertification (UNDP, 2020). Economic Dependency on Agriculture: Agriculture is a significant component of Botswana's economy, providing livelihoods for a substantial portion of the population. Climate change-induced disruptions in rainfall patterns and increased temperatures pose a direct threat to agricultural productivity (IPCC, 2018).

Entrepreneurship and Economic Development:

Economic Significance: Entrepreneurship has gained recognition as a potent driver of economic growth and development in Botswana. The government has actively promoted entrepreneurship as a means to diversify the economy and reduce dependency on traditional sectors (World Bank, 2021). Innovation and Job Creation: Entrepreneurs have the capacity to introduce innovative solutions and create job opportunities, contributing to a more vibrant and dynamic economy (Ministry of Investment, Trade and Industry, Botswana, 2020).

Research Gap in Climate Change Adaptation among Batswana Entrepreneurs:

Limited Empirical Research: Despite the increasing awareness of climate change's ramifications, there is a paucity of empirical research on how Batswana entrepreneurs are responding to these challenges. This research gap raises questions about the preparedness of local entrepreneurs to navigate the evolving landscape of climate change (EAC, 2019; GIZ, 2021). Policy and Support Deficiencies: Understanding the adaptation strategies employed by

Batswana entrepreneurs is crucial for identifying gaps in policies, support mechanisms, and interventions tailored to their needs (UNEP, 2020; WEF, 2021).

International Context:

Global Climate Agreements: Botswana, like many nations, is a signatory to international climate agreements such as the Paris Agreement. This underscores the country's commitment to addressing climate change and its recognition of the global nature of the problem (UNFCCC, 2015). Sustainable Development Goals (SDGs): The United Nations' Sustainable Development Goals, including Goal 13 (Climate Action), highlight the imperative of climate change mitigation and adaptation in achieving broader development objectives (UN, 2015).

2.2.1 Climate Change Awareness and Perception among Entrepreneurs:

Climate change awareness among entrepreneurs is a critical factor influencing their engagement in sustainable business practices. The literature emphasizes the need for a thorough understanding of entrepreneurs' perceptions and knowledge about climate change (Hockets & Wustennhagen, 2010). Hockerts and Wüstenhagen argue that awareness acts as a precursor to proactive environmental management practices. Additionally, studies such as those by Sadiq et al. (2017) and (Shepherd & Patz, 2019) emphasize the importance of incorporating climate education into entrepreneurial training programs to enhance awareness. Understanding the level of awareness and perception of climate change among entrepreneurs is crucial for shaping effective strategies and interventions. The literature highlights several key aspects related to climate change awareness and perception among entrepreneurs, with insights from both global and regional perspectives.

Global Perspectives on Entrepreneurial Climate Change Awareness:

Research by Hockerts and Wüstenhagen (2010) emphasizes the importance of environmental awareness in fostering proactive environmental management practices among entrepreneurs globally. The study suggests that entrepreneurs with a high level of environmental awareness are more likely to integrate sustainability considerations into their business strategies. Additionally, Shepherd and Patz (2019) explore the role of education in enhancing climate change awareness among entrepreneurs. Their findings suggest that education programs that incorporate climate-related topics contribute to increased awareness and understanding of the environmental challenges entrepreneurs face.

Global Studies on Entrepreneurial Climate Change Awareness:

Hockerts and Wüstenhagen (2010) highlight the importance of environmental awareness in fostering proactive environmental management practices among entrepreneurs globally. Shepherd and Patz (2019) explore the role of education in enhancing climate change awareness among entrepreneurs, emphasizing the positive impact of education programs on integrating sustainability into business strategies.

Studies on Entrepreneurial Climate Change Awareness in Botswana:

There is limited focus on entrepreneurial climate change awareness in Botswana compared to global studies. However, the existing literature reveals a growing interest in understanding the current level of awareness among Batswana Entrepreneurs regarding climate change. (Saarinen et al.,2012) examine the reaction of the tourism industry to climate change in Kgalagadi South District, providing insights into adaptation strategies employed in Botswana. To support this, Hambira et al. (2013) explore climate change adaptation practices in nature-based tourism in Maun in the Okavango Delta area, offering valuable information on how tourism businesses in Botswana prepare for climate-related challenges. (Hambira W. L., 2017) investigates "the perceptions and responses of Botswana tourism operators and policymakers to the tourism-climate change nexus", shedding light on vulnerabilities and adaptations in Maun and Tshabong areas. These sources provide insights into climate change adaptation practices in specific regions of Botswana, such as the Kgalagadi South District and the Okavango Delta area. However, they do not comprehensively cover the entire country, indicating a gap in the literature regarding entrepreneurial climate change awareness across Botswana.

African Context and Climate Change Awareness:

While limited studies specifically focus on climate change awareness among African entrepreneurs, the importance of regional context is evident. In the African context, where vulnerability to climate change is high, entrepreneurs may face unique challenges and opportunities. A study by Adefolalu and Ojediran (2020) highlights the need for increased awareness and education on climate change issues in Africa, suggesting that awareness campaigns can positively influence the perception of climate change impacts among entrepreneurs. In the African context, where vulnerability to climate change is high, entrepreneurs may face unique challenges and opportunities. A study by Adefolalu and Ojediran (2020) highlights the need for increased awareness and education on climate change issues in Africa. Their findings suggest that awareness campaigns can positively influence the

perception of climate change impacts among entrepreneurs, potentially leading to more sustainable business practices. However, critics argue that while awareness is important, structural and systemic challenges in many African countries, such as economic constraints and limited resources, may hinder the effectiveness of awareness programs Adefolau and Ojediran (2020).

This presents a nuanced perspective, acknowledging the importance of awareness while also recognizing the challenges that entrepreneurs in the African context may encounter in addressing climate change. In Support of this view, “Change Awareness and Entrepreneurial Responses in Sub-Saharan Africa" by Kamau et al. (2018) emphasizes the positive correlation between climate change awareness and the adoption of sustainable practices among entrepreneurs in Sub-Saharan Africa. Increased awareness is linked to proactive responses to environmental challenges. Additionally, (Nyamwange & Gitau, 2021) underscores the positive impact of climate change education in enhancing awareness among entrepreneurs in East Africa, leading to more sustainable business practices.

Although there are articles in support of this view, there are some who have a rather different view on this awareness in the African context. “Barriers to Climate Change Awareness Among Entrepreneurs in West Africa" by Diop and Nkonya (2019) explores the barriers that hinder climate change awareness among entrepreneurs in West Africa. It suggests that despite efforts, awareness remains low due to various socio-economic factors. Matshidze et al. (2020) also delves into the socio-economic challenges faced by entrepreneurs in Southern Africa, suggesting that these challenges often take precedence over climate change concerns, hindering awareness.

Policy Influence on Climate Change Awareness:

Government policies play a crucial role in shaping climate change awareness among entrepreneurs. Investigating corporate responses, (Muller & Kolk, 2010) suggest that initiatives like the Carbon Disclosure Project can positively influence businesses in addressing climate change concerns. They imply that external frameworks and policies can drive awareness and action. In the global context, studies by Heinrichs and Bening (2018) and Liu et al. (2017) emphasize the impact of policy frameworks and regulations in influencing the awareness and subsequent actions of entrepreneurs regarding climate change issues. In the context of Batswana entrepreneurs, these global and African insights can inform the understanding of their awareness and perception of climate change. Localized studies may be necessary to

capture the specific nuances of climate change awareness among entrepreneurs in Botswana. Similarly, (Tang, Wang, & Qui, 2021) holds the same view as the study explores the positive influence of government policies on promoting corporate social responsibility (CSR) related to climate change. It suggests that well-crafted policies can enhance awareness and proactive engagement among businesses.

On the contrary, some scholars have opposing views. Byg & Salick (2009), While not directly focused on government policies, delve into barriers to climate change adaptation in the Peruvian Andes. The study provides insights into challenges faced at the community level, which could indirectly relate to policy effectiveness. Another article by Johnson & Zaval (2011), explores public perceptions of climate change, highlighting the influence of attitudinal and demographic factors. It indirectly questions the efficacy of policies in shaping public awareness, suggesting that individual factors play a significant role.

2.2.2 Innovative Strategies of Sustainable Start-ups

Entrepreneurs in sustainable start-ups often employ innovative strategies to address climate-related challenges. The literature highlights the importance of innovation in products, services, and business models as a means of enhancing climate resilience (Schaltegger & Wagner, 2011). Studies by Ziegler and Schaltegger (2014) and Gao et al. (2020) showcase how sustainable entrepreneurs innovate to create environmentally friendly solutions, contributing to both ecological sustainability and business success. Innovation within sustainable start-ups is crucial for addressing climate-related challenges effectively. Sustainable entrepreneurs often engage in creative and forward-thinking approaches to develop products, services, and business models that contribute to environmental sustainability. The literature provides insights into various strategies employed by sustainable start-ups:

Product Innovation:

Sustainable start-ups focus on developing environmentally friendly products that contribute to climate change mitigation. This involves using eco-friendly materials, designing products with a reduced carbon footprint, and creating alternatives to resource-intensive goods. For instance, companies like Tesla have revolutionized the automotive industry by introducing electric vehicles, addressing concerns related to greenhouse gas emissions from traditional automobiles (Howard-Grenville, Davis, & Dyllick, 2017)

Service Innovation:

Sustainable start-ups often differentiate themselves through innovative services that promote environmental sustainability. This includes services that help consumers reduce their carbon footprint, improve resource efficiency, or adopt sustainable practices. Examples include companies offering energy-efficient home solutions or platforms facilitating sustainable consumption practices (Fitcher & Tiemann, 2016)

Business Model Innovation:

Business model innovation is a key aspect of sustainable entrepreneurship. Start-ups often reframe traditional business models to align with sustainability goals. This may involve adopting circular economy principles, creating value from waste, or integrating social and environmental considerations into core business operations. For example, the Cradle to Cradle (C2C) framework emphasizes designing products with the intention of being fully recycled or biodegradable, promoting a regenerative approach (Bocken et al., 2016).

Collaboration and Open Innovation:

Sustainable start-ups often engage in collaborative efforts and open innovation to tackle climate-related challenges. Collaborations with research institutions, other businesses, and NGOs can foster knowledge exchange and lead to the development of innovative solutions. Open innovation allows start-ups to leverage external expertise and resources, accelerating the development of sustainable products and services (Hall, 2011)

Technology and Digital Innovation:

Leveraging technology and digital innovation is common among sustainable start-ups. This includes the use of data analytics, Internet of Things (IoT), and other technological advancements to enhance the efficiency and sustainability of products and services. For instance, smart grids, enabled by digital technologies, enhance the management and optimization of energy consumption in sustainable energy start-ups (Albino et al., 2015).

2.2.3 Assessing Current Adaptation Strategies:

Entrepreneurs globally have been urged to adopt adaptive strategies to counter the impacts of climate change (Shane, 2003). Studies in other African contexts, like South Africa, emphasize the role of diversification and technology adoption as key adaptive strategies (Mabuza et al., 2019). Similarly, in Botswana, entrepreneurs might adopt water-efficient technologies, modify

supply chains, and engage in sustainable practices to adapt to changing climate conditions (GIZ, 2021). Climate change poses significant challenges to entrepreneurs globally, necessitating adaptive strategies to ensure business resilience (Shane, 2003). In the context of Batswana entrepreneurs, several adaptation strategies may be employed:

Crop Diversification:

(Thornton et al.,2011) emphasize the positive role of agricultural diversification as an adaptation strategy to climate change in Africa. The study discusses the benefits of diversifying crops to enhance resilience and mitigate risks. Global Perspective: Diversifying agricultural activities has been recognized globally as a crucial adaptation strategy (Lobell et al., 2014). Although focused on urbanization, (Seto et al.,2016), indirectly support diversification by discussing the need for balancing urban expansion with agricultural sustainability. Diversification can be part of a sustainable agricultural approach. Entrepreneurs worldwide, facing climate-induced uncertainties, implement crop diversification to mitigate risks (IPCC, 2018). In Botswana, where agriculture is a vital economic sector (UNDP, 2020), entrepreneurs may diversify crops to adapt to changing rainfall patterns and temperature increases (IPCC, 2018).

However, some authors differ with this view as they argue against this theory. Some of the authors are (Antle & Valdivia, 2006), who dig deep into the challenges of agricultural adaptation to climate change. While not specific to diversification, it discusses the complexities involved in effectively adapting agricultural practices. This is however, supported by (Wheeler & von Braun, 2013), who, while not directly focused on diversification, they discuss the limitations of agricultural adaptation in the face of climate change. The article introduces challenges and potential constraints that may affect the effectiveness of certain adaptation strategies.

Water Harvesting and Conservation:

Global Perspective: Water scarcity is a common challenge intensified by climate change (UN, 2021). Entrepreneurs globally adopt water harvesting and conservation techniques to ensure sustainable water use (Zahra et al., 2016). (Garrick, De Stefano, & Li, 2017) support this by focusing on the global issue of water scarcity and emphasize the role of businesses, including entrepreneurs, in adopting water conservation strategies for sustainability. The study recognizes water harvesting as a key component of these strategies. In arid Botswana,

characterized by water scarcity (UNDP, 2020), entrepreneurs may invest in water harvesting technologies to secure water supply for agricultural and business activities (IPCC, 2018).

While not directly focused on harvesting, (Hoesktra, 2016) discusses the complexities of water resource management across supply chains. The study introduces challenges and potential unintended consequences that may arise from certain water-related strategies. Additionally, (Sun et.al., 2017) examines the sustainability of water resource management in agriculture. While not specific to harvesting, they discuss the need for careful evaluation and consideration of various factors in water management strategies.

Sustainable Land Management:

Global Perspective: (Nait, 2008) emphasizes the global significance of agroforestry as a sustainable land management practice. It discusses how entrepreneurs can benefit from integrating agroforestry into their operations for enhanced sustainability. A study, "Sustainable Land Management and Its Role in Ensuring Food Security" by (Lal, 2015) discusses the critical role of sustainable land management in ensuring food security globally. Entrepreneurs, particularly those in agriculture, can find insights into how sustainable land management practices contribute to the resilience of their businesses. Sustainable land management practices are crucial for preserving soil fertility and combating desertification (UNCCD, 2019). Entrepreneurs globally adopt these practices to ensure the longevity of their ventures (Zahra et al., 2016). Given Botswana's susceptibility to desertification (UNDP, 2020), entrepreneurs may engage in sustainable land management practices, such as agroforestry, to protect against land degradation (IPCC, 2018).

However, while not specific to agroforestry, (Fox, et al., 2014) article explores unintended consequences of certain green growth strategies, highlighting that some sustainable land management practices may have complexities and potential downsides that need careful consideration. (Victor, 2020) challenges some aspects of the green growth narrative, raising questions about the feasibility and limitations of certain sustainable practices. They encourage a critical examination of sustainability initiatives.

Climate-Resilient Technologies:

Global Perspective: Entrepreneurs globally invest in climate-resilient technologies to enhance productivity and reduce environmental impact (Zahra et al., 2016). A study by Hiteva et al., (2017), explores entrepreneurial responses to climate change in the Caribbean, emphasizing

the role of support programs. It suggests that the adoption of climate-resilient technologies can be facilitated through strategic initiatives. This study is supported by Rai (2010), who emphasizes the positive impact of renewable energy technologies on sustainable development. Entrepreneurs adopting such technologies contribute to environmental sustainability and resilience. In Botswana, entrepreneurs may adopt climate-resilient technologies in sectors like agriculture and energy to mitigate the adverse effects of climate change (IPCC, 2018).

While focused on energy-efficient technologies, (Bliesner & Lundmark, 2017) highlight barriers to adoption. The article introduces challenges SMEs face, raising questions about the straightforward adoption of climate-resilient technologies. While not directly related to climate-resilient technologies, this Sorrel et al., (2019) discusses rebound effects in energy efficiency. It introduces complexities in the outcomes of adopting certain technologies, raising considerations about unintended consequences.

Capacity Building and Education:

Global Perspective: Entrepreneurial adaptation is facilitated by knowledge and awareness (Shane, 2003). It emphasizes on the positive impact of entrepreneurship education on entrepreneurs. It suggests that targeted education programs contribute to enhanced skills, knowledge, and adaptability among entrepreneurs. Olsson et al., (2007) examines adaptive governance in socio-ecological systems, this study suggests that capacity building is essential for effective adaptation. The study supports the idea that building capacity contributes to improved responses to environmental challenges. Globally, capacity building and education programs empower entrepreneurs to understand and respond to climate change challenges (Zahra et al., 2016). Entrepreneurs in Botswana may engage in capacity-building initiatives to enhance their understanding of climate change impacts and effective adaptation strategies (EAC, 2019).

However, a study by (Malmendier & Tate, 2005) While it is not directly related to climate change, this article explores challenges in learning from experience. It introduces the concept of executive overconfidence, suggesting that learning may not always lead to improved decision-making. (Ucbasaran, Shepherd, Lockett, & Lyon, 2013), also not focused on climate change, discusses challenges in entrepreneurial learning. It introduces the notion that the effectiveness of educational programs can vary, posing challenges in achieving desired outcomes.

2.2.4 Identifying Barriers to Effective Adaptation:

(Ziervogel et, 2010) identifies and discusses various barriers to climate change adaptation in South Africa, particularly in the Limpopo River Basin. It emphasizes the importance of understanding these barriers to develop effective adaptation strategies. Focused on the context of northeast Ghana, this study explores barriers to climate change adaptation, emphasizing the need for tailored policy interventions. It supports the idea that identifying barriers is crucial for effective adaptation planning. (Fosu, 2012). Climate change adaptation in entrepreneurial settings can be impeded by various factors. Studies in sub-Saharan Africa highlight challenges such as limited access to finance, inadequate infrastructure, and regulatory hurdles (Adefolalu et al., 2017). In Botswana, entrepreneurs may face barriers like a lack of awareness, limited resources, and unclear government policies (EAC, 2019).

Innovative solutions adopted by successful entrepreneurs globally include sustainable business models, green technologies, and partnerships (Zahra et al., 2016). Specific to Botswana, entrepreneurs might implement water conservation practices, leverage renewable energy sources, and engage in circular economy initiatives (UNEP, 2020). Studies indicate that Batswana entrepreneurs may employ strategies such as crop diversification, water harvesting, and sustainable land management to address the impacts of climate change on agriculture (IPCC, 2018; UNDP, 2020).

However, some authors have different views on this topic, (Nightingale, 2017) challenges the conventional use of the term "barriers" in the context of climate change adaptation. The study argues for a more nuanced understanding, suggesting that what may be perceived as a barrier could, in fact, be a complex set of social, economic, and political factors. (Marshall, 2010) challenges the conceptualization of barriers and explores the constraints to climate change adaptation in St. James, Barbados. The article suggests that the term "barriers" may oversimplify the complex challenges involved.

2.3 THEORETICAL FRAMEWORK

The Resource-Based View (RBV) theory, introduced by Wernerfelt (1984) and further developed by Barney (1991), emphasizes the role of a firm's internal resources and capabilities in achieving competitive advantage. In the context of climate change adaptation, RBV suggests that entrepreneurs leverage internal resources such as innovative skills, knowledge, and

environmental consciousness to develop distinctive capabilities for adapting to climate-induced challenges (Barney, 1991).

Entrepreneurial Orientation (EO) theory, pioneered by Miller (1983) and further elaborated by Lumpkin and Dess (1996), focuses on the proactive, innovative, and risk-taking tendencies of entrepreneurs. It posits that these orientations contribute to business success, particularly in dynamic environments. EO theory suggests that entrepreneurs with high levels of proactiveness and innovativeness are more likely to develop effective adaptation strategies to climate change challenges (Lumpkin & Des,). Linking Two Dimensions of Entrepreneurial Orientation to Firm Performance: The Moderating Role of Environment and Industry Life Cycle., 2001).

In the context of Botswana, where entrepreneurs face increasing pressures from climate change, the integration of RBV and EO theories provides a robust framework for understanding how internal resources, capabilities, and strategic orientations shape adaptation strategies. This theoretical approach allows for an exploration of how entrepreneurs in Botswana leverage their unique resources and entrepreneurial orientations to proactively respond to climate change impacts, fostering sustainable resilience and innovation in their businesses.

The theoretical framework for this research draws on the "Resource-Based View" (RBV) and "Entrepreneurial Orientation" (EO) theory to elucidate the mechanisms through which entrepreneurs in Botswana adapt to climate change, fostering sustainable resilience and innovation.

2.3.1. Resource-Based View (RBV):

The RBV posits that a firm's unique resources and capabilities are critical for achieving a competitive advantage. In the context of climate change adaptation, the RBV suggests that entrepreneurs in Botswana leverage internal resources such as innovative skills, knowledge, and environmental consciousness to develop distinctive capabilities for adapting to climate-induced challenges.

- Application: Entrepreneurs may deploy specific resources like sustainable technologies, knowledge networks, and entrepreneurial skills to enhance their adaptive capacity. The RBV framework emphasizes the role of internal capabilities in addressing external environmental threats, aligning with the need for innovative adaptation strategies.

2.3.2. Entrepreneurial Orientation (EO) Theory:

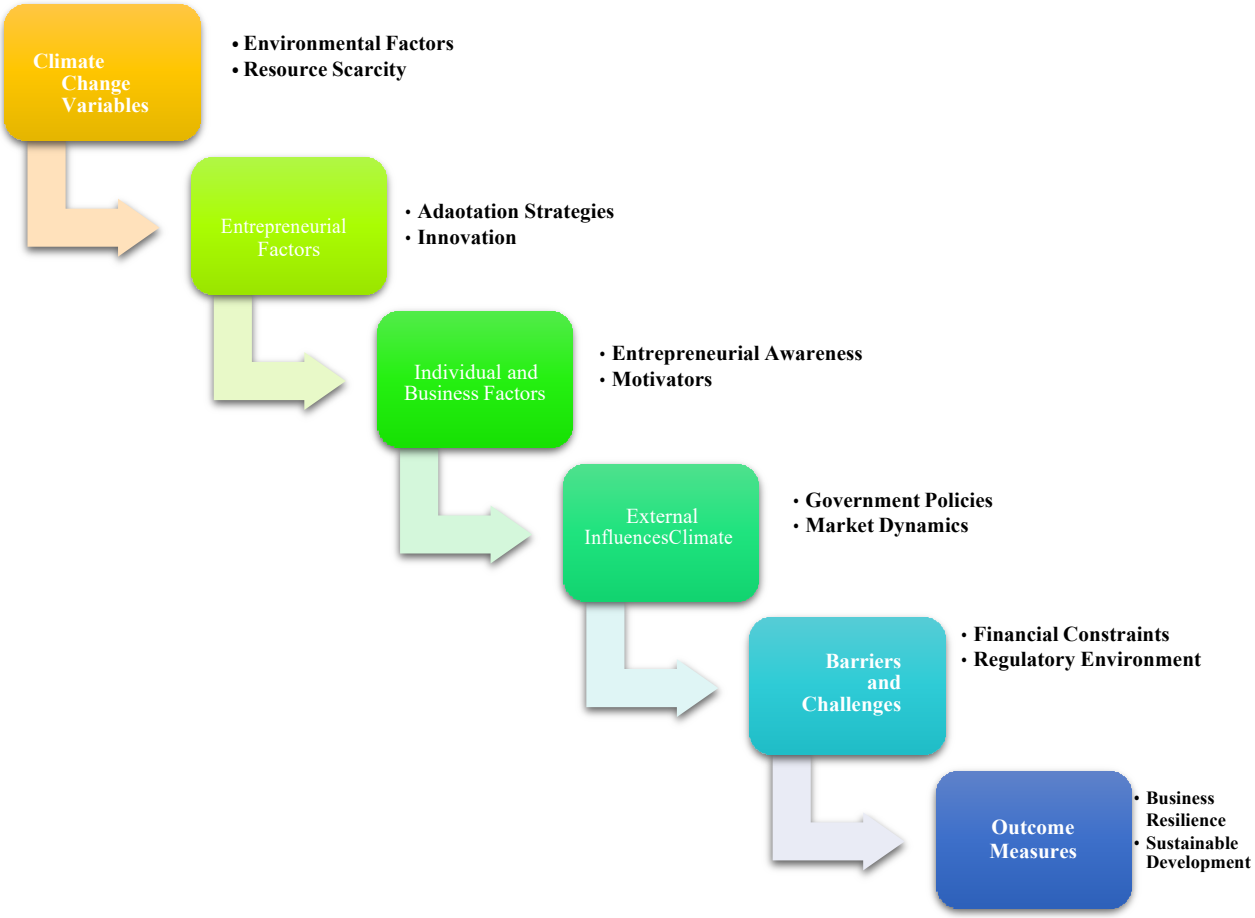
EO theory focuses on the proactiveness, innovativeness, and risk-taking tendencies of entrepreneurs, asserting that these orientations contribute to business success. In the context of climate change, EO theory suggests that entrepreneurs with a high level of proactiveness and innovativeness are more likely to develop effective adaptation strategies.

- Application: Entrepreneurs in Botswana exhibiting high EO may actively seek and implement innovative solutions, proactively anticipating and responding to climate change challenges. EO provides a lens to understand how entrepreneurs' strategic orientations influence their adaptive behaviours and resilience in the face of climate uncertainties.

By integrating RBV and EO theories, this theoretical framework offers a comprehensive understanding of how internal resources, capabilities, and entrepreneurial orientations contribute to the adaptation strategies of Batswana entrepreneurs facing climate change. The framework provides a basis for exploring the intricate interplay between internal factors and external environmental challenges, shedding light on the mechanisms driving sustainable resilience and innovation in the entrepreneurial landscape.

2.4 CONCEPTUAL FRAMEWORK

The conceptual framework for this research is designed to illustrate the interconnected factors influencing the adaptation strategies of Botswana entrepreneurs to climate change, emphasizing sustainable resilience and innovation. The framework integrates key components derived from existing literature and theoretical perspectives, providing a structured guide for the study:



Source: (Lumpkin & Des,). Linking Two Dimensions of Entrepreneurial Orientation to Firm Performance: The Moderating Role of Environment and Industry Life Cycle., 2001)

1. Climate Change Variables

- Environmental Factors: Includes changes in temperature, precipitation, and extreme weather events affecting Botswana.
- Resource Scarcity: Examines challenges related to water scarcity, droughts, and desertification impacting various sectors.

2. Entrepreneurial Response:

- Adaptation Strategies: Encompasses diverse approaches such as crop diversification, water conservation, and sustainable land management employed by entrepreneurs to mitigate climate change impacts.
- Innovation: Focuses on entrepreneurial creativity and innovation in products, services, and business models to address climate-related challenges.

3. Individual and Business Factors:

- Entrepreneurial Awareness: Reflects the level of understanding and awareness of climate change among Batswana entrepreneurs.
- Motivators: Examines personal values, economic incentives, and market opportunities driving entrepreneurs to engage in sustainable business ventures.

4. External Influences:

- Government Policies: Assesses the impact of policies, incentives, and support structures on the growth and success of sustainable entrepreneurship ventures.
- Market Dynamics: Explores market conditions, consumer preferences, and demand for sustainable products and services.

5. Barriers and Challenges:

- Financial Constraints: Examines financial barriers hindering effective climate change adaptation.
- Regulatory Environment: Investigates challenges arising from unclear policies and regulations related to sustainable entrepreneurship in Botswana.

6. Outcome Measures:

- Business Resilience: Evaluates the resilience of businesses to climate change impacts.
- Sustainable Development: Assesses contributions to sustainable development goals and the overall economic development of Botswana.

2.5 CHAPTER SUMMARY

In conclusion, Chapter 2 delves into the literature surrounding the adaptation of entrepreneurs to climate change, emphasizing the global and African contexts. It highlights the significance of climate change awareness among entrepreneurs, the role of policy frameworks, and the potential of capacity-building initiatives. The chapter also identifies various adaptation strategies, including crop diversification, water harvesting, and sustainable land management. However, while some studies support the effectiveness of these strategies, others raise concerns about their limitations and unintended consequences. Overall, Chapter 2 underscores the complexity of climate change adaptation for entrepreneurs and the need for further research to address knowledge gaps and inform sustainable resilience practices.

CHAPTER THREE: METHODOLOGY

3.1 INTRODUCTION

The methodology section of this research plays a pivotal role in guiding the systematic investigation designed to assess the adaptation of Batswana entrepreneurs to climate change. This section serves as the blueprint for the entire research process, providing a detailed account of the approaches and techniques employed to collect, analyse, and interpret the data necessary for achieving the research objectives. By outlining the research design, sampling strategy, data collection methods, and analytical procedures, this methodology ensures the study's rigor and reliability. Its purpose is to transparently convey the framework within which the study operates, offering readers a clear understanding of how the research will unfold. Through a well-structured methodology, this research aims to generate insights into the current awareness, adaptation strategies, and challenges faced by Batswana entrepreneurs in the context of climate change, ultimately contributing to the broader understanding of sustainable resilience and innovation within this demographic.

3.2 RESEARCH PHILOSOPHY

The research philosophy adopted for this study aligns with a positivist paradigm. Positivism is grounded in the belief that knowledge can be systematically acquired through empirical observation and measurement, emphasizing the importance of objectivity, replicability, and the identification of causal relationships (Gill & Johnson, 2002); Saunders et al., 2018).

Positivism is well-suited for this research as it seeks to quantitatively assess the adaptation strategies of Batswana entrepreneurs to climate change. By focusing on measurable variables, the positivist philosophy facilitates the systematic collection of data through structured surveys and questionnaires. This approach emphasizes the objective examination of facts, contributing to the generation of reliable and generalizable insights into the phenomenon under investigation (Guba & Lincoln, 1994); (Creswll & Creswll, 2017)

The positivist philosophy is particularly relevant when studying the awareness levels, barriers, and variation in adaptation strategies among Batswana entrepreneurs. It emphasizes the use of statistical analysis to identify patterns and relationships within the collected data, ensuring a rigorous and replicable investigation (Gill & Johnson, 2002). This aligns with the aim of

providing evidence-based insights that can inform policies and interventions to enhance the resilience of entrepreneurs in the face of climate change.

3.3 RESEARCH DESIGN

The research design chosen for this study is quantitative, reflecting a structured and numerical approach to assess the adaptation of Batswana entrepreneurs to climate change. The choice of a quantitative research design for this study is grounded in its ability to systematically assess the adaptation of Batswana entrepreneurs to climate change, focusing on strategies for sustainable resilience and innovation. This section discusses the rationale for selecting a quantitative approach, highlighting its relevance to achieving the research objectives.

Quantitative research methodologies, such as surveys and questionnaires, offer a standardized means of data collection, ensuring consistency in responses and facilitating comparisons across different respondent groups. This methodological consistency enhances the reliability of the findings and allows for the generalization of results to a broader population (Bryman, 2016)

Quantitative research, as defined by Creswell and Creswell (2017), involves the collection and analysis of numerical data to draw conclusions about a population. In the context of this study, the primary aim is to quantitatively measure variables related to awareness, adaptation strategies, and barriers faced by Batswana entrepreneurs in response to climate change. This approach allows for a structured investigation, enabling statistical analyses to identify patterns, correlations, and trends in the data.

The suitability of a quantitative approach is underscored by the nature of the research objectives. First, the study aims to analyse the current level of awareness among Batswana entrepreneurs regarding climate change. By employing surveys and questionnaires, quantitative data can be collected efficiently from a large and diverse sample, providing a numerical representation of awareness levels (Creswell, 2014).

Second, the research seeks to evaluate existing adaptation strategies employed by Batswana entrepreneurs. A quantitative design allows for the measurement of these strategies on a numerical scale, facilitating statistical analyses to discern the most prevalent and effective approaches to climate change adaptation (Neuman, 2014)

Finally, the exploration and identification of barriers hindering effective climate change adaptation among entrepreneurs require a systematic and structured approach. A quantitative design enables the collection of numerical data on various barriers, allowing for statistical analyses to uncover patterns and variations across different sectors (Creswell, 2013).

The decision to adopt a quantitative approach is further supported by its capacity to generate empirical evidence, enhance generalizability, and provide statistical rigor in analysing the relationships between key variables. This aligns with the goal of gaining a nuanced understanding of sustainable resilience and innovation among Batswana entrepreneurs facing the challenges of climate change.

3.4 RESEARCH APPROACH

The research approach employed for this study is quantitative, emphasizing the systematic collection and analysis of numerical data to draw statistical inferences and generalize findings (Saunders et al., 2018). This approach aligns with the positivist (Bryman, 2016) philosophy and is well-suited for investigating the adaptation strategies of Batswana entrepreneurs to climate change.

Quantitative research aims to measure and analyse phenomena through structured methodologies, making it appropriate for assessing variables like awareness levels, barriers, and adaptation strategies quantitatively (Creswell & Creswell, 2017). The utilization of surveys and questionnaires facilitates the collection of standardized data from a large sample, allowing for statistical analyses that can reveal patterns, correlations, and trends.

3.5 TARGET POPULATION

The population study were Batswana entrepreneurs, defined as individuals who own and operate businesses across diverse sectors in Botswana. This definition includes a spectrum of entrepreneurial activities, from small enterprises to larger establishments. Target sample was 300. (Fumagalli, 2013, p. 113) Define a population as ‘all elements items or objects whose characteristics are studied. Sampling will be used to collect data. That is, only about a few people from the population were used for the study. (Hewitt-Taylor, 2013, p. 39), define a

sample as, “a small proportion of the population.’’ The sample was drawn from different people in Botswana, irrespective of their age.

The target population for this study comprises Batswana entrepreneurs who are actively engaged in various economic sectors within Botswana. In the context of this research, Batswana entrepreneurs are defined as individuals who own and operate businesses, ranging from small enterprises to larger establishments, across diverse industries. Entrepreneurs, in this context, are individuals who have taken the initiative to start and manage a business, assuming financial risks for the purpose of profit-making (Schaper, 2002). They play a crucial role in the economic development of Botswana, contributing to employment generation, innovation, and overall economic growth.

3.6 VALIDITY AND RELIABILITY

1. Validity:

Validity in research refers to the extent to which an instrument or procedure measures what it is intended to measure. Ensuring the validity of the research instruments and design is crucial for drawing accurate conclusions about the adaptation of Batswana entrepreneurs to climate change.

Content Validity: The questionnaire was designed to cover all relevant aspects of climate change adaptation among Batswana entrepreneurs. Content validity was ensured through a thorough review of existing literature (Hambira, 2017; Saarinen et al., 2012) and consultation with experts in the field.

Face Validity: The questionnaire was pre-tested with a small group of Batswana entrepreneurs to assess its clarity, relevance, and comprehensibility. Adjustments were made based on their feedback, ensuring that the questions were easily understood and aligned with the study's objectives.

Construct Validity: The study utilized established constructs related to climate change awareness, adaptation strategies, and barriers. These constructs were derived from existing theories and empirical evidence, contributing to the overall construct validity of the study, some of which are (Hair, et. al., 2010), who emphasise this validity aspect.

2. Reliability:

Reliability refers to the consistency and stability of measurements or procedures. In this thesis, reliability was paramount to ensure that the study's findings could be trusted and replicated (Hair, et. al., 2010).

Questionnaire Reliability: Internal consistency of the questionnaire items was assessed using statistical measures like Cronbach's alpha (Hair, et. al., 2010) . This analysis ensures that the questions within each construct (e.g., awareness, adaptation strategies) consistently measure the intended aspects of the entrepreneurs' responses.

Sampling Reliability: The stratified random sampling method enhances the reliability of the sample by minimizing biases and ensuring that each stratum is adequately represented (Hair, et. al., 2010). This increases the likelihood that the findings can be generalized to the broader population of Batswana entrepreneurs.

Data Collection Reliability: The detailed data collection procedure (Dillman et al., 2014; Fowler, 2013) ensures consistency in how the questionnaires are administered, emphasizing ethical practices, confidentiality, and standardized procedures. This contributes to the reliability of the collected data.

By addressing validity and reliability considerations throughout the research process, this thesis aims to provide trustworthy and meaningful insights into the adaptation of Batswana entrepreneurs to climate change, fostering confidence in the study's findings and conclusions.

3.7 SAMPLE AND SAMPLING DESIGN

The sampling process is a critical component of research methodology, influencing the generalizability and reliability of study findings. In the context of assessing the adaptation of Batswana entrepreneurs to climate change, a thoughtful approach to sampling is essential. The sample represents the subset of the population from which data is collected, and the sampling design determines how participants are selected. A well-designed sample enhances the external validity of the study, allowing for meaningful insights into the broader population.

1. Population Definition:

The population for this study comprises Batswana entrepreneurs, defined as individuals who own and operate businesses across diverse sectors in Botswana. This definition includes a

spectrum of entrepreneurial activities, from small enterprises to larger establishments (Hambira W. L., 2017).

2. Sampling Frame:

The sampling frame identifies the specific individuals or entities eligible for inclusion in the study. In this research, the sampling frame consists of a comprehensive list of Batswana entrepreneurs obtained from business registries, industry associations, and relevant government databases (Saarinen, et.al 2012).

3. Sampling Method:

A stratified random sampling method is employed to ensure representation across various sectors and business sizes. Strata are created based on industry types and business scales, and samples are randomly selected from each stratum. This method allows for a more nuanced understanding of adaptation strategies across different entrepreneurial contexts (Dillman, et.al 2014).

4. Sample Size Determination:

The sample size is determined based on statistical considerations to achieve adequate power and precision. A larger sample enhances the study's ability to detect significant patterns and trends within the population of Batswana entrepreneurs (Krejcie & Morgan, 1970).

5. Sampling Procedure:

Participants are selected using a systematic random sampling approach within each stratum. This method ensures that every entrepreneur in the stratum has an equal chance of being included, contributing to the representativeness of the sample (Fowler, 2013)

By incorporating these sampling considerations, the research aims to generate insights that are reflective of the diverse landscape of Batswana entrepreneurs, contributing to the robustness and applicability of the study's findings.

3.8 SOURCES OF INFORMATION

In conducting research on the adaptation strategies of Batswana entrepreneurs to climate change, various sources of information have been utilized to ensure a comprehensive and well-

informed study. The following sources have been instrumental in shaping the literature review, theoretical framework, and overall research design:

1. Intergovernmental Panel on Climate Change (IPCC):

- The IPCC reports offer authoritative and comprehensive assessments of climate change science, impacts, and adaptation. These reports provide a global perspective on climate change trends and their implications.

2. United Nations Development Programme (UNDP):

- UNDP publications contribute insights into the intersection of climate change and socio-economic development, with a focus on emerging economies. Reports from UNDP are valuable for understanding the broader implications of climate change on entrepreneurship.

3. Academic Journals (e.g., Shane, Zahra):

- Studies by scholars such as Shane (2003) and Zahra et al. (2006, 2016) contribute to the academic discourse on entrepreneurship and innovation. These sources offer theoretical frameworks and empirical insights into the role of entrepreneurs in adapting to environmental challenges.

4. European Commission and European Green Deal:

- The European Green Deal provides insights into how developed regions, like Europe, emphasize the role of businesses and entrepreneurs in achieving climate neutrality. This source informs the international context of climate change initiatives.

5. Studies on North American Entrepreneurship (e.g., Osiel González Dávila et al., 2020):

- Research studies focused on North America, such as the work by Osiel González Dávila and colleagues, offer comparative perspectives on adaptation strategies employed by entrepreneurs facing climate-related challenges.

6. Reports from Development Agencies (e.g., GIZ, UNEP):

- Reports from development agencies like the German Corporation for International Cooperation (GIZ) and the United Nations Environment Programme (UNEP) provide practical insights into climate change adaptation strategies and sustainable development practices.

7. World Economic Forum (WEF):

- The World Economic Forum reports contribute to understanding the intersection of climate change, entrepreneurship, and sustainable development. These sources highlight global initiatives and best practices.

8. Government Publications (e.g., Ministry of Investment, Trade and Industry, Botswana):

- Official documents and publications from the government of Botswana, such as those from the Ministry of Investment, Trade and Industry, provide insights into national strategies, policies, and perspectives on entrepreneurship and climate change adaptation.

3.9 DATA COLLECTION INSTRUMENT

For the quantitative study, a self-administered questionnaire was employed as the primary data collection instrument. A questionnaire is a structured research instrument consisting of a series of questions designed to gather information from respondents. It serves as a systematic tool for collecting data by obtaining participants' responses to predefined inquiries. (Thornhill, 2019). The questionnaire was designed to capture comprehensive insights into the awareness, adaptation strategies, and barriers faced by Batswana entrepreneurs in response to climate change.

Components of the Questionnaire:

SECTION 1: Demographic Information

Participants were requested to provide demographic details such as age, gender, business sector, and years of entrepreneurial experience to ensure a comprehensive understanding of the sample.

SECTION 2: Awareness Section

This section gauges the level of awareness among Batswana entrepreneurs regarding climate change through questions about their knowledge of climate change issues and their impact on businesses. To gauge the level of awareness among Batswana entrepreneurs regarding climate change, questions in this section were designed to elicit responses requiring only a "yes" or "no." This binary format aimed to capture clear and concise indications of respondents' knowledge of climate change issues and their understanding of its potential impact on businesses. By simplifying the response options to "yes" or "no," the survey sought to

streamline data collection and facilitate straightforward analysis of respondents' awareness levels without ambiguity or complexity.

SECTION 3: Adaptation Strategies Section

Questions in this section explore the current adaptation strategies implemented by Batswana entrepreneurs. It covers areas such as changes in business practices, technology adoption, and sustainable measures. A Likert scale (5=Strong agree, 4=Agree, 3=Neutral, 2=Disagree, 1= Strong disagree) was used in this section of the questionnaire to collect data.

SECTION 4: Barriers Section

This segment focuses on identifying the primary challenges and barriers hindering effective climate change adaptation. It includes questions related to financial constraints, regulatory hurdles, and other obstacles faced by entrepreneurs.

Validation of the Questionnaire:

The questionnaire underwent a rigorous validation process to ensure reliability and validity. It drew on established scales and items from relevant literature on climate change adaptation and entrepreneurship.

3.10 DATA COLLECTION PROCEDURE

The data collection procedure employed in this study followed a systematic and ethical process to ensure the reliability and validity of the gathered information. Established methodologies (Dillman, Smyth, & Christian, 2014; Fowler, 2013) guided the procedure, which was designed for both electronic and physical distribution of surveys to Batswana entrepreneurs.

Preparation and Planning: A comprehensive questionnaire aligned with the research objectives was developed (Dillman et al., 2014). Survey instructions and questions were crafted with clarity to facilitate understanding (Fowler, 2013). Survey materials were translated into Setswana to accommodate participants proficient in the national language.

Electronic Distribution: Introductory emails explaining the purpose, confidentiality, and importance of participation were sent (Dillman et al., 2014). Questionnaires were distributed via email and messaging platforms with secure links (Dillman et al., 2014).

Physical Distribution: Contact points were established in selected regions where entrepreneurs could access and return printed questionnaires (Fowler, 2013). Survey administrators were trained on ethical data collection practices, ensuring consistency in explanations provided to participants.

Ensuring Confidentiality: The confidential nature of responses was clearly communicated in the cover letter (Dillman et al., 2014). Secure data storage systems were implemented for electronically collected responses.

Follow-up Procedures: Reminder emails and messages were sent to participants who had not responded within a specified period (Dillman et al., 2014).

Data Verification and Quality Control: Data completeness and accuracy were periodically assessed during the collection phase. Checks were implemented to identify and rectify inconsistencies in responses.

Participant Consent: A consent form was included with the questionnaire, emphasizing voluntary participation and the right to withdraw at any stage (Dillman et al., 2014).

Translation Considerations: For participants proficient in Setswana, the questionnaire and instructions were provided in both Setswana and English.

This data collection procedure integrated best practices from established survey research methodologies, ensuring ethical standards, participant understanding, and the confidentiality of responses. It aligned with the research aims and objectives, promoting a comprehensive and systematic approach.

3.11 DATA PROCESSING

The quantitative data collected from the questionnaires were initially supposed to be processed using the Statistical Package for Social Services (SPSS) version. SPSS is a widely used software for statistical analysis, known for its reliability and versatility in handling large datasets (Hinton, 2014). In this study, SPSS was chosen for its capability to perform various statistical analyses, including descriptive statistics, inferential statistics, and regression

analysis. All data collected from the questionnaires were entered into SPSS for analysis. However, due to the use of Google Forms, the data were automatically analyzed within the platform, providing efficient processing and analysis of the respondents' data. While SPSS was the intended tool for data processing, the use of Google Forms facilitated seamless data analysis without the need for manual entry into the SPSS software.

3.12 DATA ANALYSIS METHODS

In this study, inferential statistics were utilized to explore the relationships between different demographic variables, such as age, gender, and education level, and the awareness of climate change among Batswana entrepreneurs. Specifically, chi-square tests were conducted to assess whether there were significant differences in awareness levels among various demographic groups. Chi-square tests are statistical methods used to determine if there is an association between categorical variables (Agresti & Finlay, 2009). In this context, they helped identify any disparities in climate change awareness based on demographic characteristics. This approach allowed for a thorough examination of how factors like age, gender, and education level might impact entrepreneurs' awareness of climate change, providing valuable insights into the dynamics of awareness within different demographic segments.

Additionally, regression analysis was utilized to explore the predictive factors influencing entrepreneurs' adoption of climate change adaptation strategies. By regressing adaptation outcomes on variables such as education level, business size, and prior exposure to climate-related events, we were able to identify significant predictors of adaptation behaviour. This regression model allowed for the assessment of both individual and contextual factors contributing to the variability in adaptation efforts among Batswana entrepreneurs.

3.13 ASSUMPTIONS AND REQUIREMENTS

1. **Adequate Explanation of Appropriateness:**

The assumption is that the chosen research methodology, which employs a quantitative approach through surveys, is appropriate for assessing the adaptation strategies of Batswana entrepreneurs to climate change. This assumption is based on the need for quantitative data to measure awareness levels, identify barriers, and evaluate adaptation strategies effectively. The appropriateness of this approach is supported by existing literature (Hockerts & Wüstenhagen, 2010; Shepherd & Patz, 2019), which emphasizes the importance of quantitative methods in assessing environmental awareness and

adaptation strategies among entrepreneurs globally.

2. Mention of Other Possibilities from Literature:

While a quantitative approach is deemed suitable for this research, it's essential to acknowledge alternative methodologies such as qualitative studies or mixed-method approaches. Qualitative methods, such as interviews or focus groups, could provide deeper insights into the lived experiences and perceptions of Batswana entrepreneurs regarding climate change adaptation. However, due to resource constraints or the need for larger sample sizes, a quantitative approach was prioritized for its scalability and statistical rigor. Literature exploring various methodological approaches to studying climate change adaptation among entrepreneurs should be consulted to ensure a comprehensive understanding of available options (Hockerts & Wüstenhagen, 2010; Shepherd & Patz, 2019).

3. Good Level of Appropriateness and Rigorous Data Evaluation:

The assumption here is that the chosen research design and methodology, along with rigorous data collection and analysis procedures, will ensure the appropriateness and reliability of the findings. By adhering to established survey research methodologies (Dillman et al., 2014; Fowler, 2013), the study aims to mitigate biases and ensure the validity of the results. Additionally, the use of statistical techniques for data analysis, such as chi-square tests and regression analysis, will contribute to the robustness of the findings, enhancing their reliability and generalizability (Hockerts & Wüstenhagen, 2010; Shepherd & Patz, 2019).

3.14 ETHICAL CONSIDERATIONS

(Sternberg, 2000, p. 4) Refers to Ethics as “a branch in Philosophy which seeks to identify and clarify the presuppositions of human conduct having to do with good or bad”. “Respect for human dignity is a cardinal ethical principle underlying research ethics and is intended to protect the interests and the physical, psychological or cultural integrity of an individual”, (Sternberg, 2000, p. 6).

Ethical considerations are fundamental in any research endeavour, ensuring the protection of participants' rights and maintaining the integrity of the study. (Duska, 2007, p. 20), says that “Ethics involves Evaluating whether particular actions, practices or systems are moral or immoral.” In the context of the research on "Assessing the Adaptation of Batswana

Entrepreneurs to Climate Change: Strategies for Sustainable Resilience and Innovation," several ethical considerations have been taken into account.

1. Participant Confidentiality

Protecting the confidentiality of participants is crucial to encourage open and honest responses, fostering trust in the research process, therefore all collected data was anonymized and stored securely to prevent unauthorised access (APA, 2017). Creswell and Creswell (2017) emphasize the importance of assuring participants that their responses will be kept confidential to encourage candid and truthful answers. For this research, the participants' identities were safeguarded, and confidentiality agreements were upheld throughout the research process.

2. Voluntary Participation:

Participants must willingly choose to take part in the study without any form of coercion, ensuring their autonomy and right to withdraw at any stage. The research emphasized voluntary participation, clearly stating in the consent form that individuals were free to withdraw from the study without consequences. The American Psychological Association (APA, 2017) highlights the principle of voluntary participation in ethical research practices.

3. Informed Consent:

Informed consent is essential to ensure participants are fully aware of the purpose, procedures, potential risks, and benefits of the study. Before participating in the study, each research respondent received information about the study and answers to any questions they may have had. Participants were provided with a detailed consent form, explaining the nature of the study, the data collection process, and their rights. The consent form was signed both by the researcher and the respondents in agreement of the terms included in the study. The form was provided in both Setswana and English to cater to language preferences. The Declaration of Helsinki (World Medical Association, 2013) underscores the importance of informed consent in protecting participants' autonomy and well-being.

4. Translation Considerations:

Providing survey materials in both Setswana and English ensures inclusivity and accessibility for participants proficient in either language. The questionnaire and instructions are translated to Setswana, considering the linguistic diversity of the target population. The International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals

for Human Use (ICH, 2016) emphasizes the importance of providing information in a language understandable to participants.

By incorporating these ethical considerations, the research strives to uphold the highest standards of research integrity, respecting the rights and well-being of the participants.

3.15 CHAPTER SUMMARY

In summary, the research methodology outlined in Chapter 3 serves as a comprehensive roadmap for assessing the adaptation of Batswana entrepreneurs to climate change. The chosen research design, incorporating a quantitative approach, is well-suited to the study's objectives, offering a systematic and structured framework for data collection and analysis. The sampling strategy ensures a diverse representation of Batswana entrepreneurs, enhancing the generalizability of findings. The ethical considerations embedded in the methodology prioritize participant confidentiality, voluntary participation, and informed consent, upholding the integrity of the research process. The data collection and analysis procedures are meticulously planned, drawing on established methodologies to ensure reliability and validity. Overall, the robust methodology outlined in Chapter 3 positions this research to generate meaningful insights into the dynamics of climate change adaptation among Batswana entrepreneurs, contributing valuable knowledge to the broader discourse on sustainable resilience and innovation.

CHAPTER FOUR: ANALYSIS OF DATA AND INTERPRETATION OF RESULTS

4.1 INTRODUCTION

Chapter Four rigorously examines the collected data to unveil insights into the adaptation of Batswana entrepreneurs to climate change. Through systematic analysis and interpretation, the chapter aims to unravel patterns, trends, and implications for sustainable resilience and innovation. The initial section focuses on data cleaning and preparation, ensuring the quality and accuracy of the dataset. Descriptive statistics provide an overview, while inferential statistics and comparative analysis draw broader conclusions and unveil variations across sectors and demographics. This section unveils key findings, linking them to existing literature and theoretical frameworks. The exploration goes beyond statistical outcomes, providing a nuanced understanding of how Batswana entrepreneurs navigate climate change challenges.

4.2 DATA ANALYSIS

Below are the findings from the survey, in which questionnaires were distributed online to the selected sample. 150 questionnaires were distributed but only 114 respondents participated from the 150 sample, due to a number of reasons. The survey results provide insights into the demographic characteristics of the respondents. In terms of gender distribution, the majority were female (63.2%), followed by male respondents (35.1%), with a small percentage (1.8%) preferring not to disclose their gender. Regarding age, the largest proportion fell within the 26-35 age group (49.1%), followed by the 36-45 age group (26.6%), while smaller percentages were distributed across other age categories. In terms of citizenship, the vast majority of respondents were citizens (86.7%), with a smaller proportion being non-citizens (13.3%). Education-wise, the majority had a university-level education (91.2%), while a smaller percentage had completed upper secondary school (2.6%), and the remaining respondents had other educational backgrounds (6.1%). Regarding marital status, the majority were single (59.6%), followed by married individuals (31.6%), with smaller percentages identifying as divorced, widowed, or other marital statuses. Below is a table that shows the demographic profile of the 114 respondents.

Table 4.1 Demographic profile:

Category	Number of Respondents	Percentage
Gender		
Male	40	35.1%
Female	72	63.2%
Prefer not to say	2	1.8%
Age		
18-25	21	18.4%
26-35	56	49.1%
36-45	28	26.6%
46-59	9	7.9%
60 & Above	0	-
Citizenship		
Citizen	98	86.7%
Non-citizen	16	13.3%
Education		
Primary	0	-
Lower secondary school	0	-
Upper secondary school	3	2.6%
University	104	91.2%
Other	7	6.1%
Marital status		
Single	68	59.6%
Married	36	31.6%
Divorced	5	4.4%
Widowed	2	1.8%
Other	3	2.6%

1. Gender Distribution: The survey indicates that 63.2% of respondents were female, suggesting a higher representation of women among the surveyed entrepreneurs compared to men. This could imply that there is a significant presence of female entrepreneurs in Botswana's business landscape.

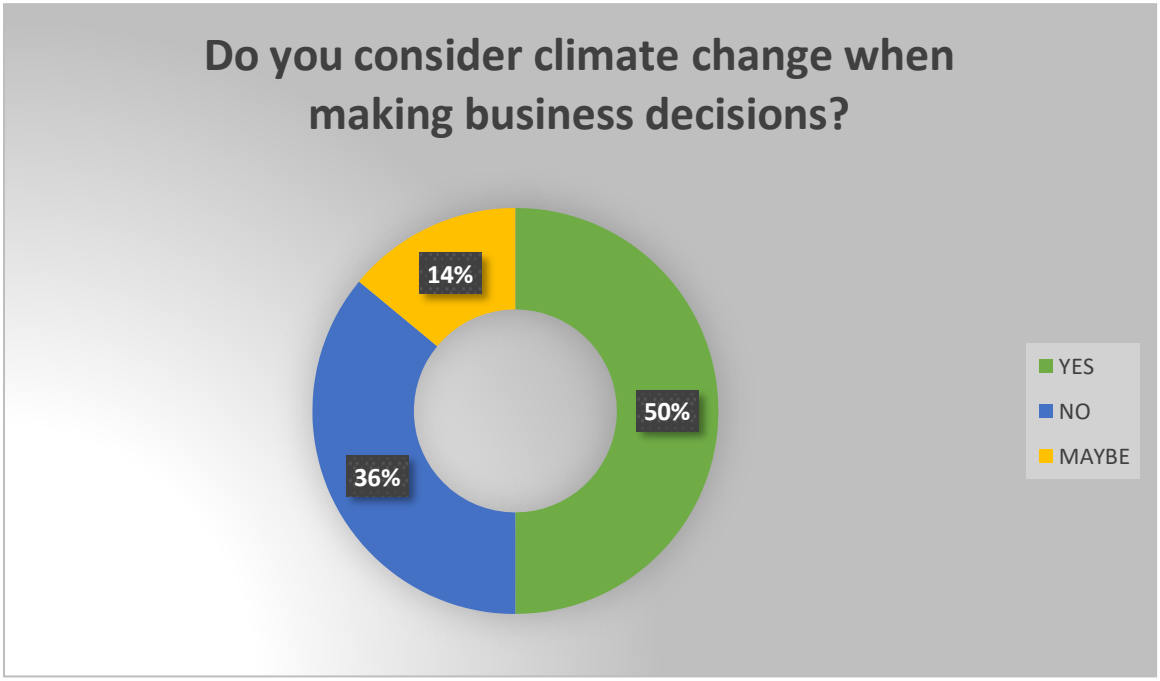
2. Age Groups: The majority of respondents (49.1%) fell within the age group of 26-35 years, indicating a relatively young entrepreneurial demographic. This age group is typically associated with early-stage entrepreneurship and may represent a cohort of emerging entrepreneurs in Botswana.

3. Citizenship Status: A large proportion of respondents (86.7%) identified as citizens of Botswana, indicating that the survey primarily captured insights from local entrepreneurs. This suggests that the study focused on the experiences and perspectives of entrepreneurs within the country.

4. Educational Background: The overwhelming majority of respondents (91.2%) had a university-level education, highlighting the importance of higher education in entrepreneurship. This suggests that the surveyed entrepreneurs likely possess a relatively high level of formal education, which could influence their business strategies and decision-making processes.

5. Marital Status: The majority of respondents (59.6%) identified as single, indicating that a significant portion of entrepreneurs in the survey are unmarried. This demographic characteristic may reflect the independence and flexibility often associated with entrepreneurship, where individuals may prioritize their business pursuits over marital commitments.

Figure 4.1 Analysis of Findings: Consideration of Climate Change in Business Decisions



The responses gathered from the questionnaire shed light on the extent to which entrepreneurs consider climate change when making business decisions. Among the respondents, 50% affirmed that they currently consider climate change in their business decisions, while 36% indicated that they do not. Additionally, 14% of respondents expressed uncertainty, stating "maybe" regarding their consideration of climate change in business decisions.

The findings suggest a mixed landscape concerning the integration of climate change considerations into business decision-making processes among entrepreneurs. While half of

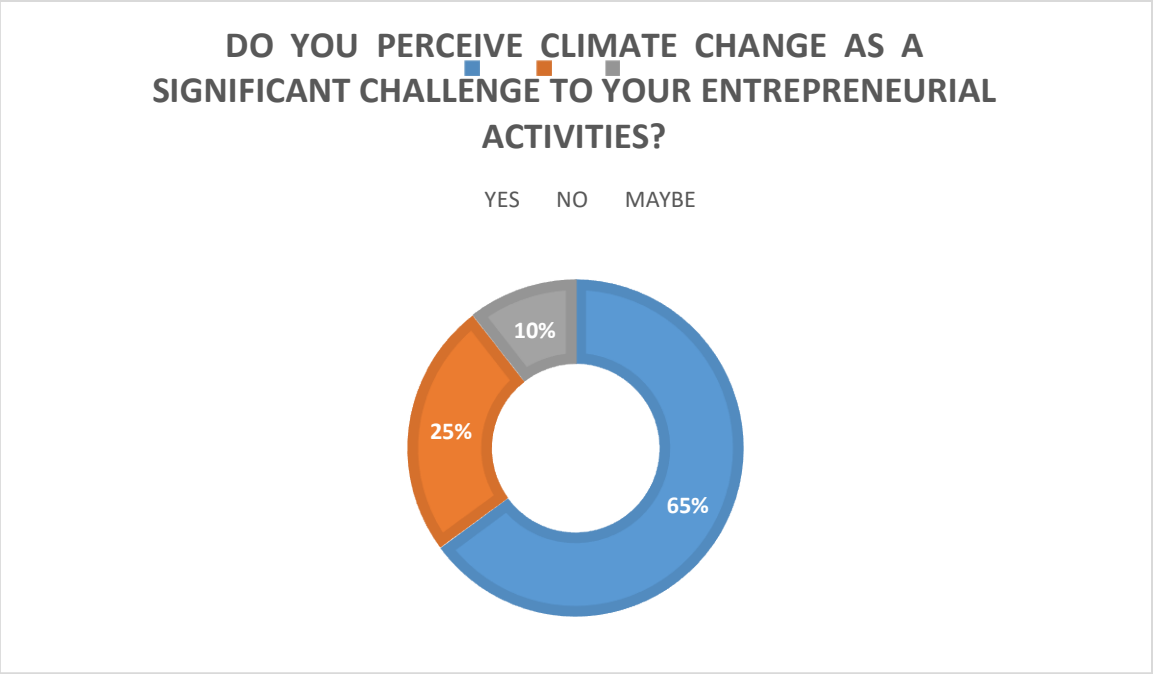
the respondents acknowledge actively considering climate change, a significant portion (36%) does not incorporate it into their decision-making. The uncertainty expressed by 14% of respondents further underscores the complexity surrounding the issue.

The acknowledgment of climate change in business decision-making by half of the respondents reflects a growing awareness of the importance of environmental sustainability and resilience in entrepreneurial activities. It indicates a proactive approach among these entrepreneurs towards addressing climate-related risks and opportunities in their business operations.

Conversely, the sizable proportion of respondents who do not currently consider climate change in their business decisions highlights potential barriers or challenges hindering the integration of environmental considerations into entrepreneurial practices. These barriers could range from limited awareness or understanding of climate change impacts to perceived trade-offs between environmental sustainability and business profitability.

Further exploration is needed to understand the underlying factors driving these varied responses and to identify strategies for promoting the integration of climate change considerations into entrepreneurial decision-making processes. Such insights are essential for fostering sustainable business practices and enhancing the resilience of entrepreneurial ventures in the face of climate change.

Figure 4.2 Analysis of Findings: Perceived Significance of Climate Change as a Challenge to Entrepreneurial Activities



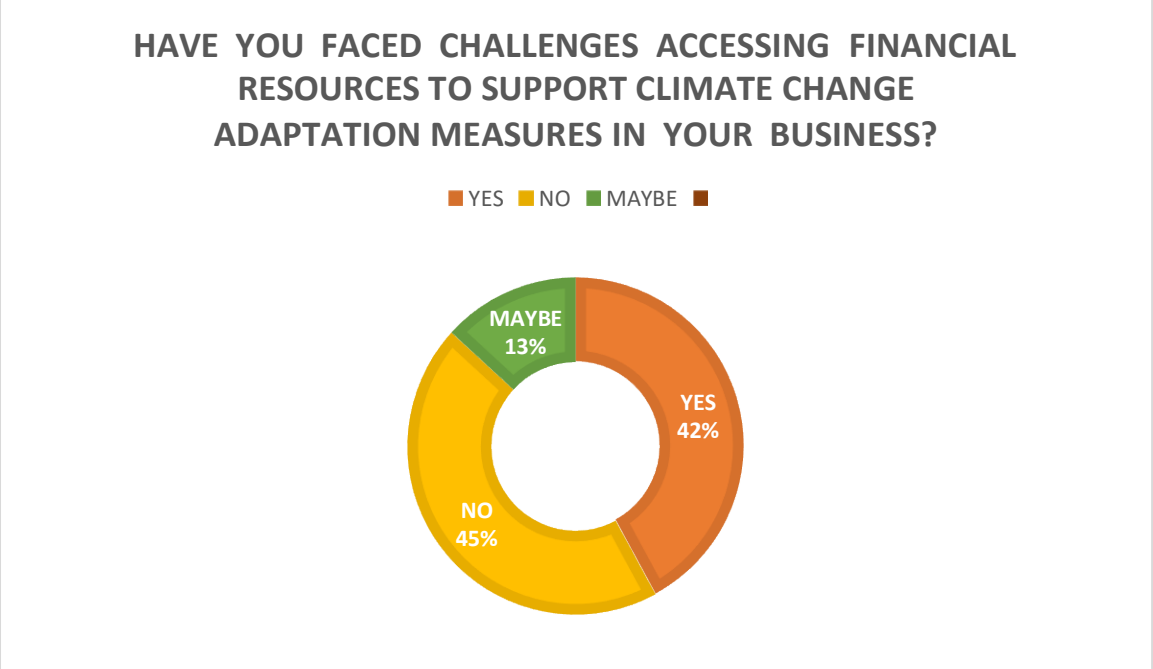
The responses from the questionnaire reveal varied perceptions among respondents regarding the significance of climate change as a challenge to their entrepreneurial activities. Among the respondents, 65% acknowledged perceiving climate change as a significant challenge, while 25% reported not considering it a significant challenge. Additionally, 10% of respondents indicated uncertainty, stating "maybe" regarding the significance of climate change as a challenge to their entrepreneurial activities.

The findings indicate that most respondents recognize climate change as a significant challenge impacting their entrepreneurial struggles. This perception aligns with the growing recognition of climate change as a global issue affecting various sectors, including business and entrepreneurship. The acknowledgment of climate change as a significant challenge underscores the need for entrepreneurs to implement adaptive strategies to mitigate its adverse effects on their businesses.

While a quarter of respondents do not perceive climate change as a significant challenge, and a smaller percentage express uncertainty, it is essential to explore the underlying reasons for these perspectives. Factors such as industry sector, geographic location, and level of exposure to climate-related risks may influence respondents' perceptions. Further analysis can provide insights into the nuances of how entrepreneurs perceive and respond to climate change challenges in their business operations. Understanding these perceptions is crucial for

informing policy interventions and support mechanisms aimed at enhancing climate resilience among entrepreneurs.

Figure 4.3 Perceived Challenges in Accessing Financial Resources for Climate Change Adaptation Measures



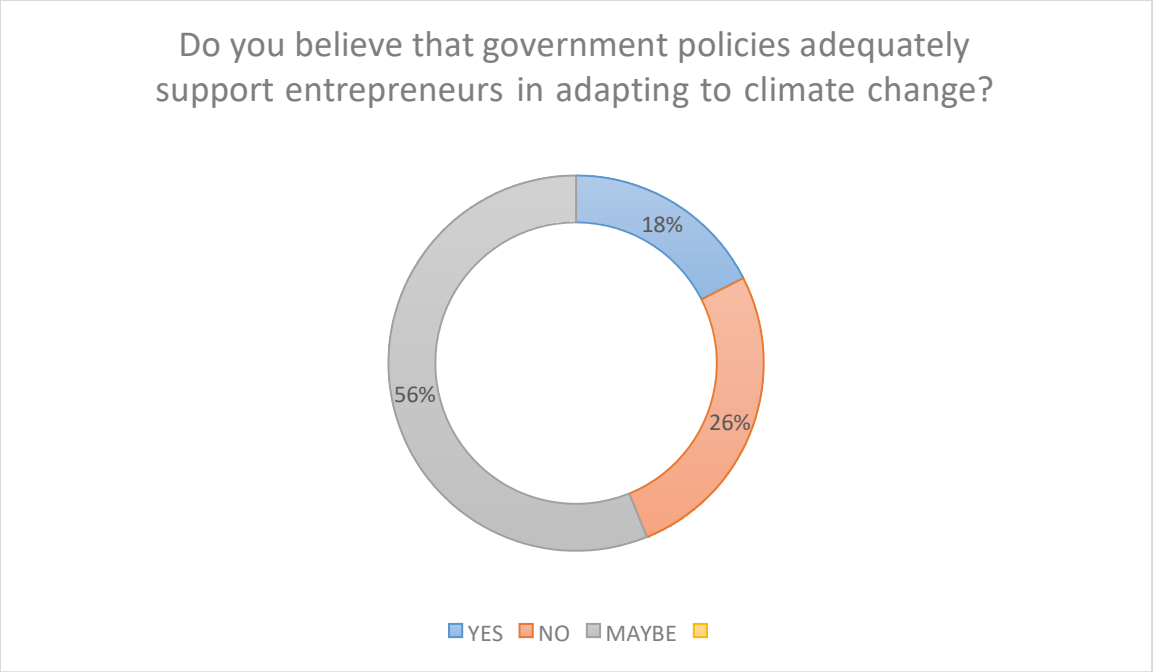
The responses from the questionnaire indicate varying perceptions among respondents regarding the challenges they face in accessing financial resources for climate change adaptation measures in their businesses. Among the respondents, 42% acknowledged facing challenges in accessing financial resources, while 45% reported not facing such challenges. Additionally, 13% of respondents indicated uncertainty, stating "maybe" regarding the challenges they encounter in accessing financial resources.

The findings suggest a mixed landscape in terms of perceived challenges related to financial resources for climate change adaptation. While a significant portion of respondents acknowledge facing difficulties in accessing such resources, nearly half of the respondents reported no challenges. This disparity in responses could stem from various factors such as the size and nature of businesses, availability of alternative funding sources, or differing levels of awareness and understanding of climate change adaptation strategies.

Further analysis is needed to delve deeper into the specific barriers faced by those who perceive challenges in accessing financial resources. Understanding these barriers can inform policymakers and stakeholders about the support mechanisms required to facilitate climate

change adaptation efforts among entrepreneurs. Additionally, exploring the reasons behind the uncertainty expressed by some respondents ("maybe") can provide insights into the nuanced dynamics of financial resource accessibility in the context of climate change adaptation. Figure below shows us the findings:

Figure 4.4 Analysis of Findings: Perceived Government Support for Climate Change Adaptation



The responses obtained from the questionnaire provide insights into entrepreneurs' perceptions regarding the adequacy of government policies in supporting adaptation to climate change. Among the respondents, only 18% expressed belief that government policies adequately support entrepreneurs in adapting to climate change. In contrast, a substantial majority of 56% indicated a lack of confidence in the adequacy of government support. Additionally, 26% of respondents expressed uncertainty, stating "maybe" regarding the level of government support for climate change adaptation among entrepreneurs.

The findings reveal a notable discrepancy between the perceived level of government support and the expectations of entrepreneurs concerning climate change adaptation. The overwhelming majority of respondents (56%) expressed dissatisfaction with current government policies, suggesting a perceived gap or inadequacy in the support mechanisms provided to entrepreneurs in addressing climate change challenges.

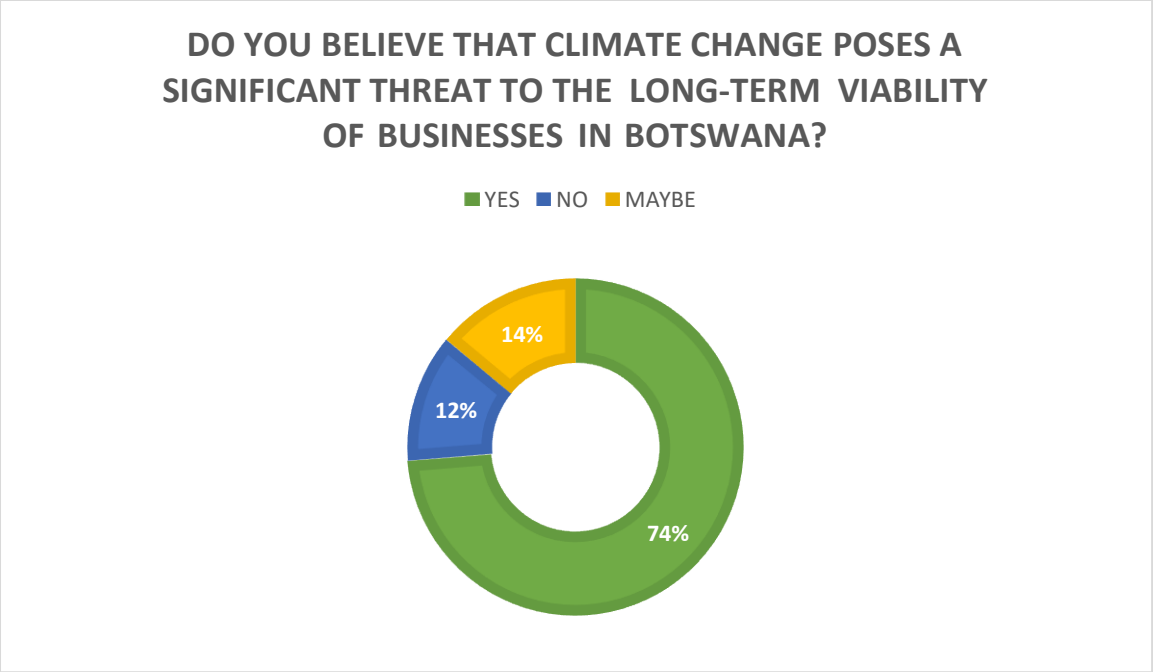
The relatively low proportion of respondents (18%) who believe that government policies

adequately support entrepreneurs in adapting to climate change highlights a significant disconnect between policy implementation and the needs of entrepreneurs. This suggests a potential lack of alignment between existing policies and the practical requirements of entrepreneurial ventures in the context of climate change.

The uncertainty expressed by 26% of respondents further underscores the complexity and ambiguity surrounding the issue of government support for climate change adaptation among entrepreneurs. It indicates a need for greater clarity and transparency in policy frameworks to address the diverse needs and concerns of entrepreneurial stakeholders.

Overall, the findings call attention to the imperative for policymakers to reassess and strengthen existing policies to better support entrepreneurs in adapting to climate change. By addressing the perceived gaps in government support, policymakers can foster an enabling environment that empowers entrepreneurs to implement effective adaptation strategies and contribute to building climate-resilient economies.

Figure 4.5 Analysis of Findings: Perception of Climate Change Threat to Business Viability



The responses obtained from the questionnaire shed light on entrepreneurs' perceptions regarding the threat posed by climate change to the long-term viability of businesses in Botswana. A substantial majority of respondents (74%) expressed belief that climate change indeed poses a significant threat to the long-term viability of businesses in the country. In contrast, only a small proportion (12%) indicated a contrary view, stating that they do not

perceive climate change as a significant threat. Additionally, 14% of respondents expressed uncertainty, stating "maybe" regarding the extent of threat posed by climate change to business viability.

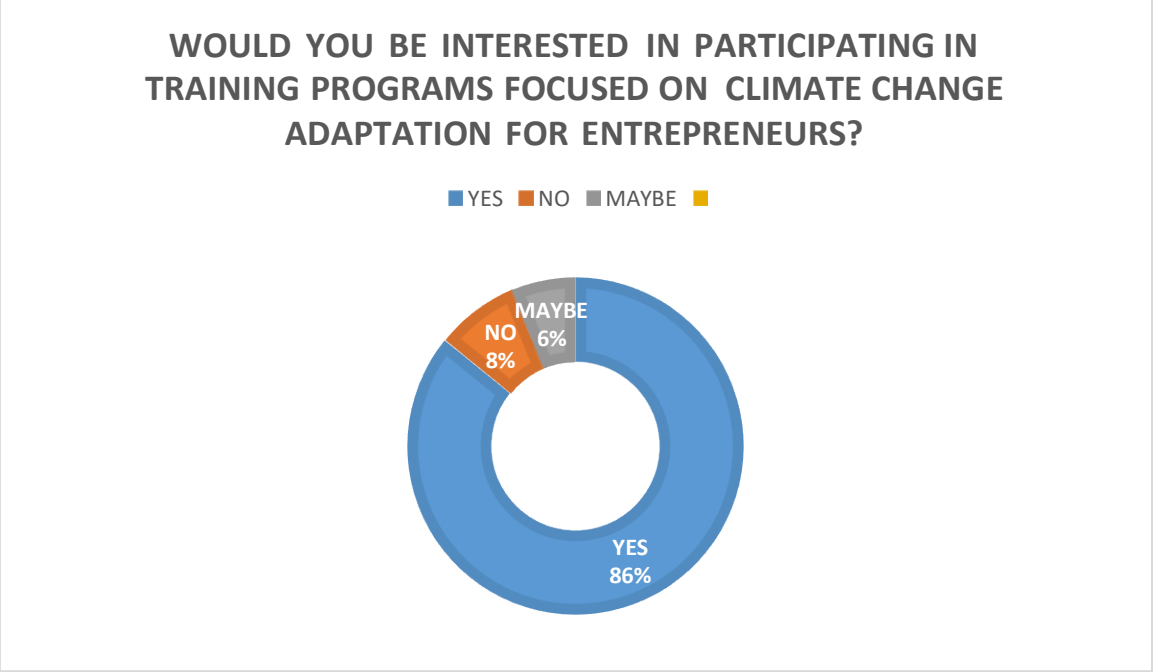
The findings underscore a widespread recognition among entrepreneurs of the profound implications of climate change for business sustainability and continuity in Botswana. The high proportion of respondents (74%) who perceive climate change as a significant threat reflects a consensus within the entrepreneurial community regarding the severity of the issue. This suggests a heightened awareness of the potential risks and challenges posed by climate change, including impacts on resource availability, operational disruptions, and market uncertainties.

The minority view (12%) that climate change does not pose a significant threat to business viability may reflect varying perceptions or interpretations of climate-related risks among entrepreneurs. It is possible that these respondents perceive other factors as more critical determinants of business viability or are less attuned to the potential long-term consequences of climate change.

The uncertainty expressed by 14% of respondents highlights the complexity of assessing the multifaceted impacts of climate change on business viability. It indicates a need for further education, awareness-raising, and information dissemination to enable entrepreneurs to make informed decisions and adopt proactive strategies to mitigate climate-related risks.

Overall, the findings underscore the importance of recognizing and addressing the challenges posed by climate change to ensure the resilience and sustainability of businesses in Botswana. By acknowledging the significant threat posed by climate change, entrepreneurs and policymakers can work collaboratively to develop and implement adaptive strategies that safeguard business continuity and contribute to sustainable economic development.

Figure 4.6 Analysis of Findings: Interest in Climate Change Adaptation Training Programs



The responses obtained from the questionnaire provide insights into entrepreneurs' interest in participating in training programs focused on climate change adaptation. An overwhelming majority of respondents (86%) expressed interest in such programs, indicating a strong willingness to enhance their knowledge and skills in adapting to climate change. In contrast, a small proportion (8%) stated that they were not interested in participating in such training programs, while an additional 6% expressed uncertainty ("maybe") regarding their interest.

The high level of interest among respondents (86%) reflects a recognition of the importance of building capacity and acquiring relevant skills to address the challenges posed by climate change. Entrepreneurs appear motivated to proactively engage with climate change adaptation efforts, underscoring a desire to better understand the implications of climate change for their businesses and to develop effective strategies to mitigate risks and capitalize on opportunities.

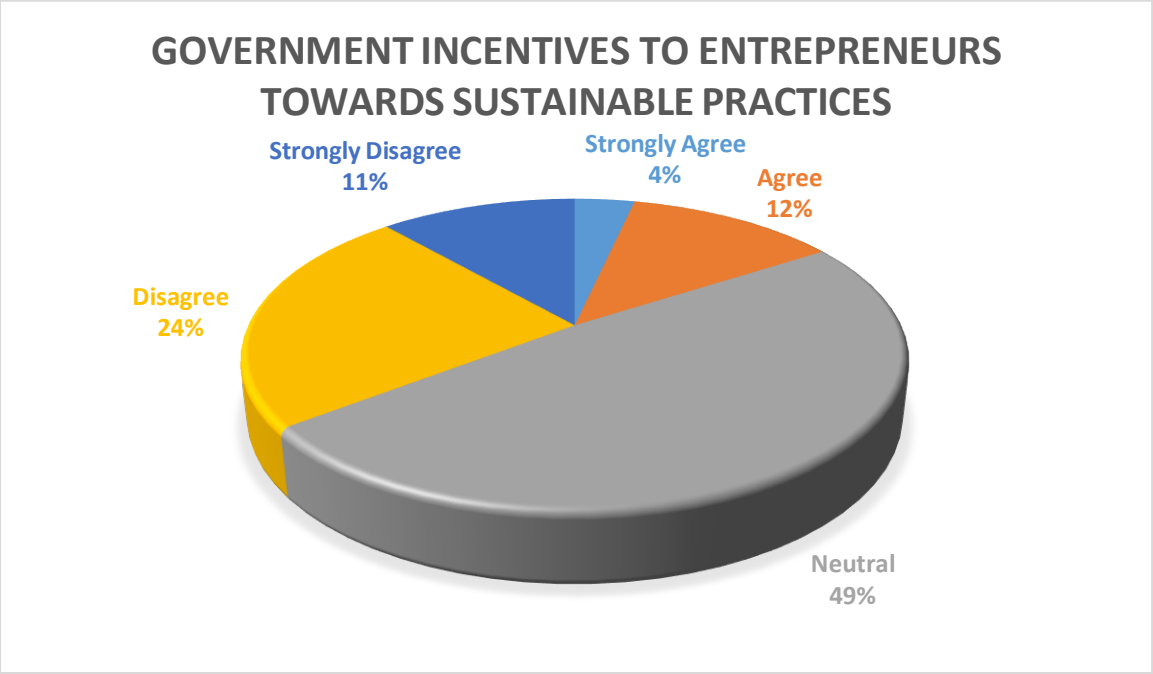
The minority view (8%) that expressed disinterest in participating in training programs may stem from various factors, including competing priorities, perceived relevance of the training, or existing knowledge and expertise in climate change adaptation. It is essential to explore the underlying reasons for this disinterest further to tailor training programs to better meet the needs and preferences of these individuals.

The uncertainty expressed by 6% of respondents suggests a need for further information or clarification regarding the nature and content of the training programs. Addressing any misconceptions or concerns and providing clear communication about the potential benefits of

participating in such programs may help to increase interest and engagement among these individuals.

Overall, the findings highlight a strong appetite among entrepreneurs in Botswana for training programs focused on climate change adaptation. By capitalizing on this interest and providing relevant, accessible, and tailored training opportunities, stakeholders can empower entrepreneurs to develop adaptive capacities, enhance resilience, and contribute to sustainable development in the face of climate change challenges.

Figure 4.7 Analysis of Findings: Government Incentives to Entrepreneurs towards sustainable practices.



Positive Perception (Strongly Agree/Agree)

The combined percentage of respondents who strongly agree or agree (16%) indicates a minority viewpoint that the government adequately incentivizes sustainable practices. This subset of respondents likely perceives existing government initiatives, such as grants, subsidies, or tax incentives, as effective in encouraging businesses to adopt sustainable measures. Their positive perception may stem from personal experiences with government support programs or from observing successful cases within their networks.

Neutral Perception

The largest segment of respondents (49%) falls into the neutral category, indicating uncertainty or ambiguity regarding the effectiveness of government incentives. This neutral stance may reflect a lack of awareness or first-hand experience with government initiatives related to climate change adaptation. It could also suggest a perception that while some incentives exist, they may not be sufficient or accessible to all entrepreneurs.

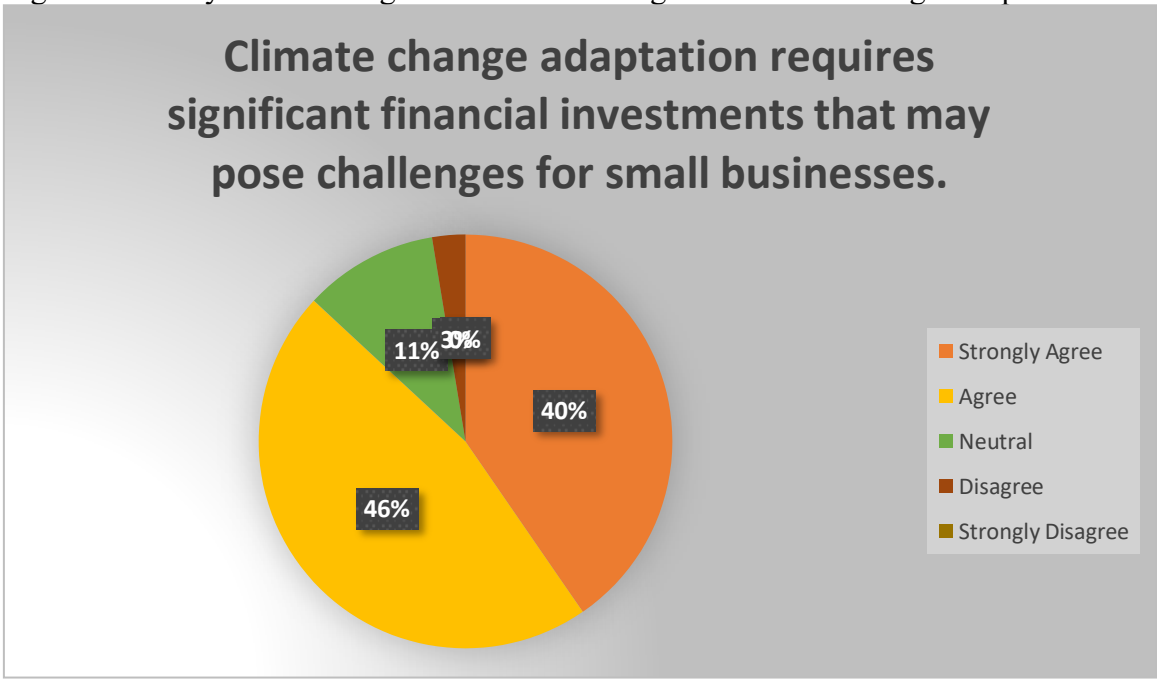
Negative Perception (Disagree/Strongly Disagree)

A notable proportion of respondents (35%) express disagreement with the statement, with 24% disagreeing and 11% strongly disagreeing. This indicates a substantial skepticism or dissatisfaction with the current level of government support for sustainable practices. These respondents may perceive existing incentives as inadequate, ineffective, or inaccessible, leading to a lack of motivation to adopt sustainable measures.

Implications

The mixed perceptions regarding government incentives underscore the complexity of the issue and the diverse perspectives among entrepreneurs. While some entrepreneurs view government support positively, others remain skeptical or indifferent, highlighting potential areas for improvement in policy design, implementation, and communication. Addressing the concerns raised by skeptical respondents and increasing awareness among neutral participants could enhance the effectiveness of government initiatives aimed at promoting sustainable practices in response to climate change.

Figure 4.8 Analysis of Findings: Financial Challenges in Climate Change Adaptation



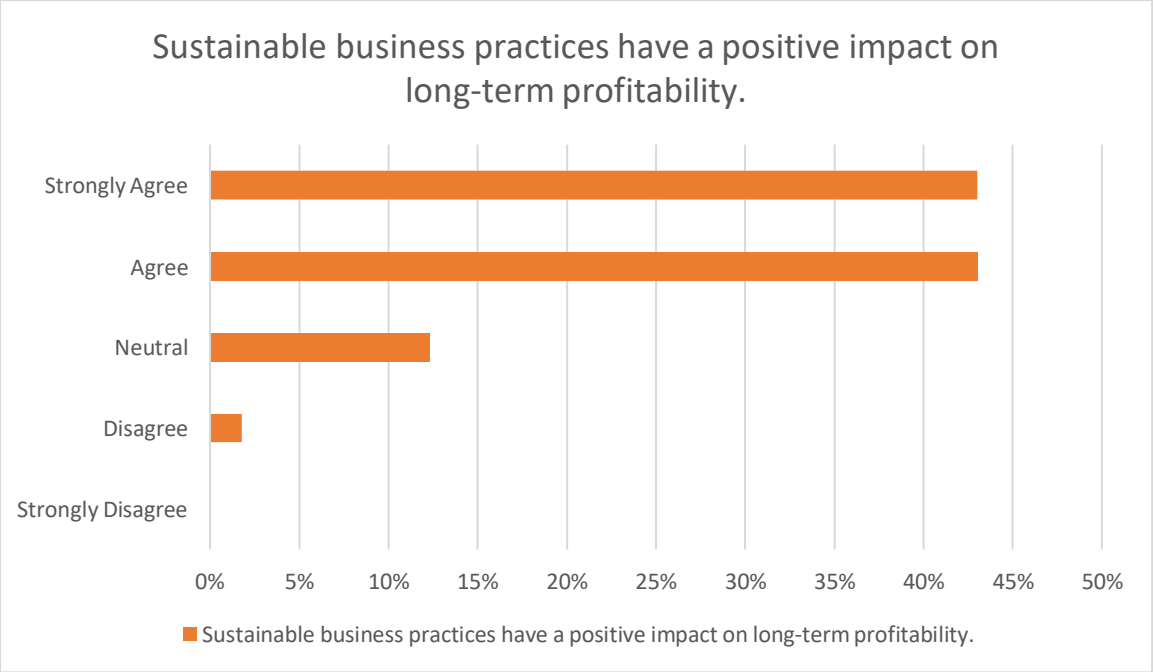
The results indicate that a substantial proportion of respondents (86%) either strongly agree or agree that climate change adaptation requires significant financial investments that may pose challenges for small businesses. This high agreement underscores the widespread recognition among entrepreneurs of the financial implications associated with adapting to climate change. Small businesses, in particular, often operate with limited financial resources, making it challenging to allocate funds for adaptation measures. The acknowledgment of these financial constraints suggests that entrepreneurs are keenly aware of the potential barriers they face in implementing climate change adaptation strategies.

The relatively low percentage of respondents who disagreed (3%) or strongly disagreed (0%) with the statement indicates that few entrepreneurs perceive climate change adaptation as requiring minimal financial investment or posing insignificant challenges for small businesses. This finding underscores the consensus among respondents regarding the substantial financial commitments needed to effectively adapt to climate change. While a small percentage of respondents remained neutral (11%), the overwhelming majority expressing agreement highlights the widespread concern among entrepreneurs regarding the financial barriers to climate change adaptation.

Given the consensus among respondents regarding the financial challenges associated with climate change adaptation, it is imperative for policymakers, stakeholders, and support organizations to recognize and address these barriers. Strategies such as providing financial assistance, offering incentives for adopting sustainable practices, and facilitating access to

funding opportunities can help alleviate the financial burden on small businesses and foster greater resilience to climate change impacts. By addressing these challenges, stakeholders can empower entrepreneurs to implement effective adaptation measures and contribute to building a more climate-resilient business landscape in Botswana.

Figure 4.9 Analysis of Findings: Impact of Sustainable Business Practices on Profitability

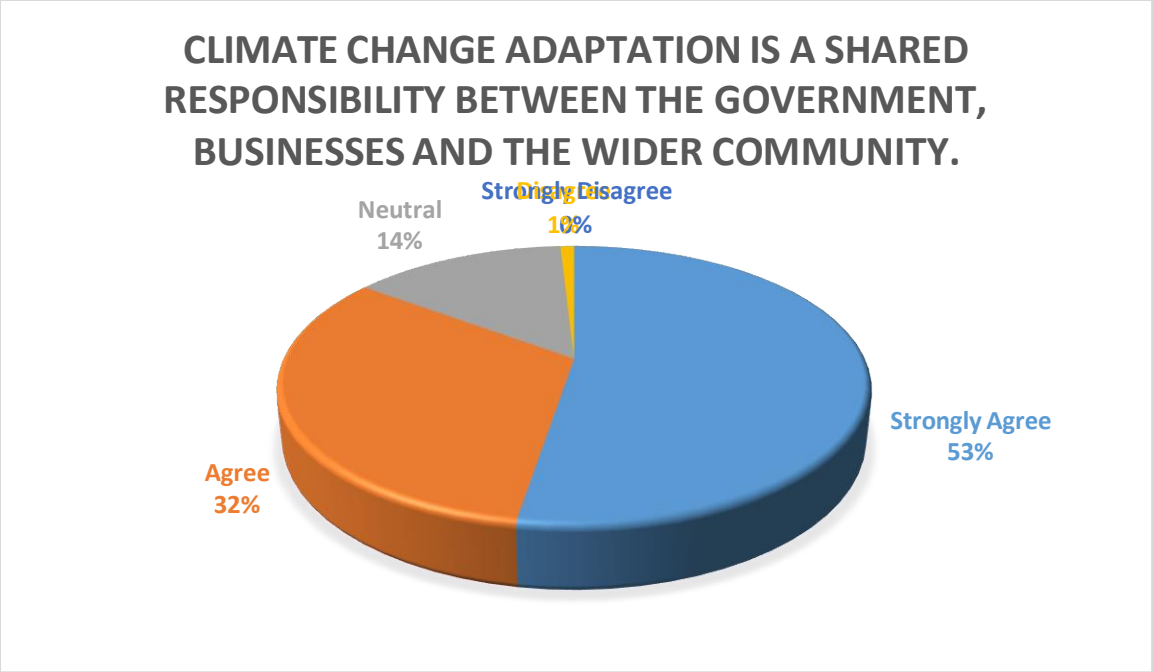


The findings reveal a strong consensus among respondents regarding the positive impact of sustainable business practices on long-term profitability. A significant proportion of respondents (86%) either strongly agree or agree that adopting sustainable business practices leads to enhanced profitability over the long term. This high level of agreement suggests that entrepreneurs recognize the value of integrating sustainability into their business operations as a means of driving financial success.

The absence of respondents who strongly disagreed and the minimal percentage of those who disagreed (2%) with the statement indicate a broad consensus among entrepreneurs regarding the beneficial effects of sustainable practices on profitability. This consensus underscores the widespread belief that embracing sustainability not only contributes to environmental and social goals but also yields tangible financial benefits for businesses. While a small percentage of respondents remained neutral (12%), the overwhelming majority expressing agreement highlights the prevailing sentiment among entrepreneurs regarding the importance of sustainability for long-term business success.

These findings underscore the importance of promoting sustainable business practices among entrepreneurs in Botswana. By encouraging the adoption of environmentally friendly and socially responsible initiatives, policymakers and stakeholders can help businesses realize their full potential for long-term profitability while also contributing to environmental conservation and social welfare. Moreover, fostering a supportive ecosystem for sustainable entrepreneurship can position Botswana as a leader in sustainable development, attracting investment, fostering innovation, and driving economic growth in the region.

Figure 4.10 Analysis of Findings: Shared Responsibility for Climate Change Adaptation



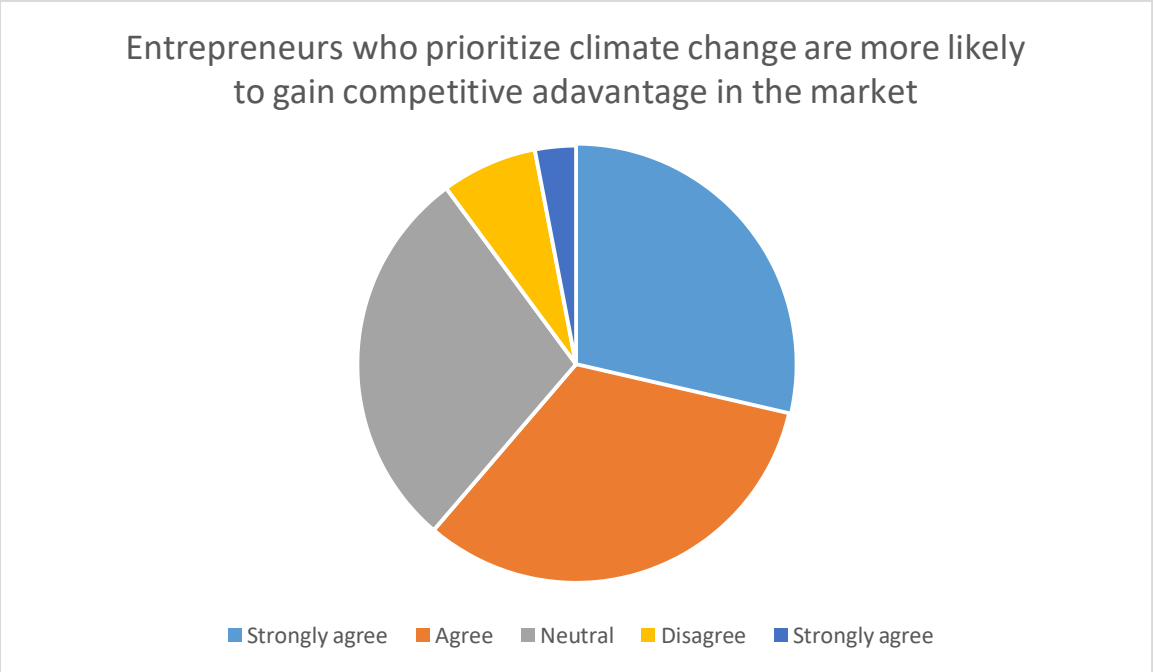
The results indicate a widespread acknowledgment among respondents regarding the shared responsibility for climate change adaptation. A majority of respondents (85%) either strongly agree or agree that climate change adaptation is a collective effort involving the government, businesses, and the wider community. This consensus underscores the recognition that addressing the impacts of climate change requires collaborative action and engagement from multiple stakeholders.

The absence of respondents who strongly disagreed and the low percentage of those who disagreed (10%) with the statement indicate a general agreement among entrepreneurs regarding the shared nature of responsibility for climate change adaptation. This consensus reflects the understanding that effective adaptation measures cannot be achieved through isolated efforts but require coordinated action and cooperation across sectors and society.

While a small percentage of respondents remained neutral (14%), the overwhelming majority expressing agreement highlights the prevailing sentiment among entrepreneurs regarding the need for collective responsibility in tackling climate change challenges. This finding underscores the importance of fostering partnerships and collaboration among government, businesses, and the wider community to implement effective adaptation strategies, build resilience, and mitigate the impacts of climate change in Botswana.

These findings emphasize the importance of fostering a conducive environment for multi-stakeholder collaboration and engagement in climate change adaptation efforts. By promoting dialogue, cooperation, and shared responsibility, policymakers and stakeholders can enhance the effectiveness of adaptation initiatives, foster resilience, and contribute to sustainable development in Botswana.

Figure 4.11 Analysis of Findings: Competitive Advantage through Climate Change Prioritization



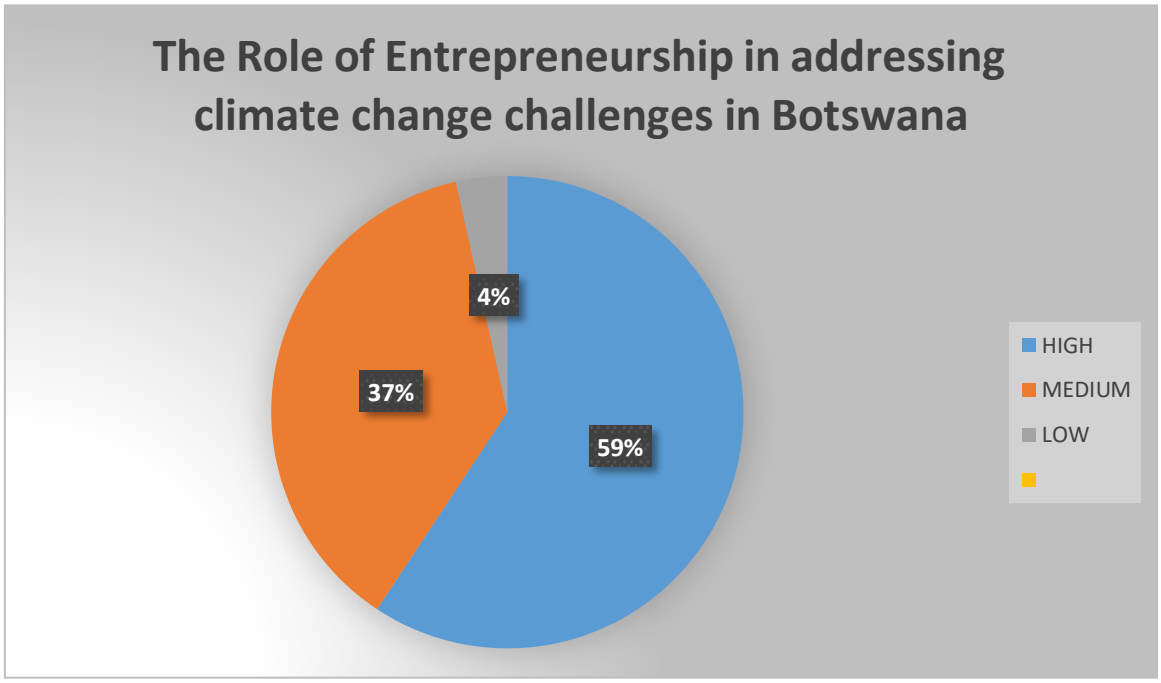
The survey findings suggest a varied perspective among respondents regarding the relationship between prioritizing climate change and gaining a competitive advantage in the market. While a significant portion of respondents (62%) either strongly agree or agree with the statement, indicating a belief in the potential benefits of prioritizing climate change, a considerable percentage (36%) express either neutrality or disagreement.

Among those who strongly agree and agree, representing 62% of respondents, there is a recognition of the strategic value of prioritizing climate change initiatives in gaining a competitive edge. This sentiment aligns with the growing trend of consumers and stakeholders favouring environmentally responsible businesses and sustainable practices. Entrepreneurs who prioritize climate change may differentiate their offerings, enhance brand reputation, and attract environmentally conscious consumers, thereby gaining a competitive advantage in the market.

Conversely, the percentage of respondents expressing neutrality (29%) or disagreement (10%) suggests a degree of skepticism or uncertainty regarding the link between climate change prioritization and competitive advantage. This perspective may stem from concerns about potential costs, resource constraints, or skepticism about the market benefits of sustainability initiatives.

Overall, while a significant proportion of entrepreneurs recognize the potential for competitive advantage through climate change prioritization, a notable segment remains undecided or skeptical. This finding underscores the importance of further research and education to elucidate the business case for sustainability and climate change action, as well as the need for tailored support mechanisms to assist entrepreneurs in integrating sustainability into their business strategies effectively.

Figure 4.12 Analysis of Findings: Entrepreneurship's Role in Addressing Climate Change Challenges in Botswana



The survey results indicate varying perceptions among respondents regarding the role of entrepreneurship in addressing climate change challenges in Botswana. A majority of respondents (59.3%) view the role as high, suggesting a significant belief in the potential of entrepreneurship to contribute meaningfully to climate change mitigation and adaptation efforts. This perspective aligns with the recognition of entrepreneurship as a driver of innovation, creativity, and problem-solving, capable of fostering sustainable solutions to environmental challenges.

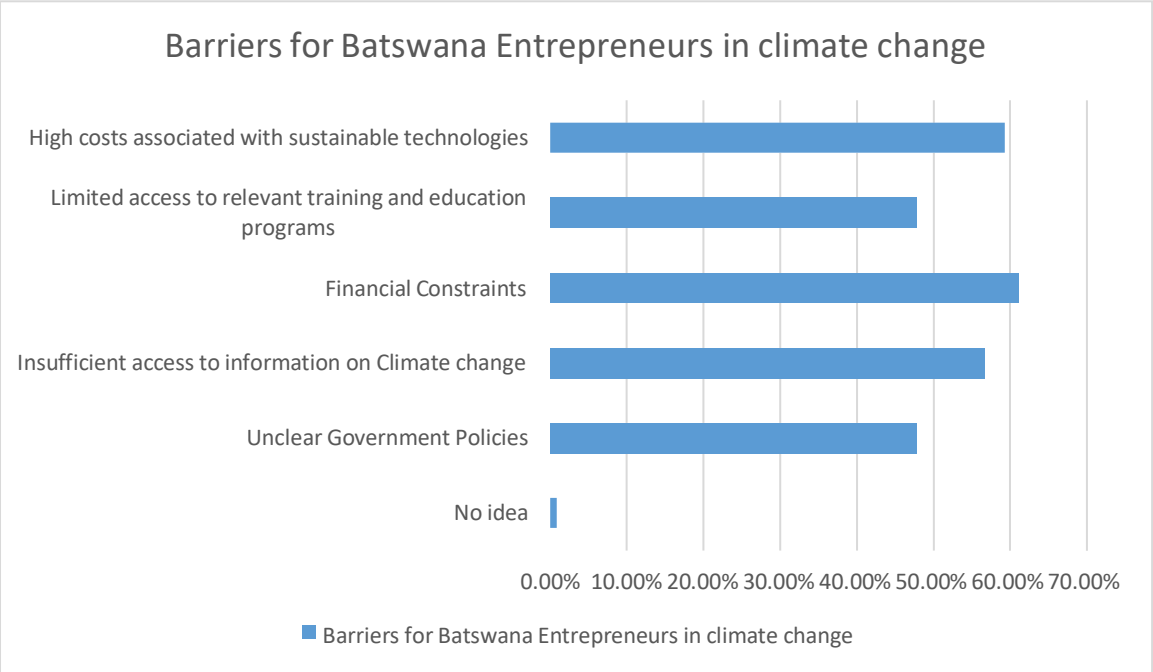
Additionally, a substantial proportion of respondents (37.2%) perceive the role of entrepreneurship in addressing climate change challenges as medium, indicating a recognition of its importance but perhaps with reservations about its effectiveness or scale of impact. This perspective may reflect a pragmatic assessment of the limitations and constraints faced by entrepreneurs in implementing climate change initiatives, such as resource constraints, regulatory barriers, or market dynamics.

A smaller percentage of respondents (3.5%) express uncertainty or skepticism about the role of entrepreneurship in addressing climate change challenges, suggesting a need for further clarification or education on the potential contributions of entrepreneurial activities in this context.

Overall, the survey findings highlight a generally positive perception of entrepreneurship's role in addressing climate change challenges in Botswana, with a majority of respondents

acknowledging its significance. However, there is a need for continued support, collaboration, and capacity-building efforts to empower entrepreneurs to effectively contribute to climate change mitigation and adaptation efforts in the country.

Figure 4.13 Analysis of Findings: Barriers for Entrepreneurs in Botswana Regarding Climate Change Adaptation



Financial Constraints:

Financial constraints emerge as the most significant barrier identified by 61.1% of respondents. This finding underscores the critical role of financial resources in implementing climate change adaptation measures. For entrepreneurs, limited access to capital may restrict their ability to invest in technologies, infrastructure, and practices necessary to adapt to changing environmental conditions. Addressing this barrier may require innovative financing mechanisms, such as grants, low-interest loans, or subsidies, specifically targeted at climate-resilient businesses. Additionally, capacity-building initiatives focused on financial management and access to funding opportunities could help entrepreneurs navigate financial challenges more effectively.

Unclear Government Policies:

Approximately 47.8% of respondents perceive unclear government policies as a significant barrier to climate change adaptation. This highlights a perceived lack of clarity or consistency

in government regulations and support mechanisms related to climate change. Ambiguous policies may create uncertainty for entrepreneurs, making it difficult to plan and implement effective adaptation strategies. Addressing this barrier necessitates improved communication and coordination between government agencies responsible for climate-related initiatives. Clear and transparent policy frameworks, coupled with stakeholder engagement in policy development processes, can provide entrepreneurs with the clarity and guidance needed to navigate regulatory landscapes effectively.

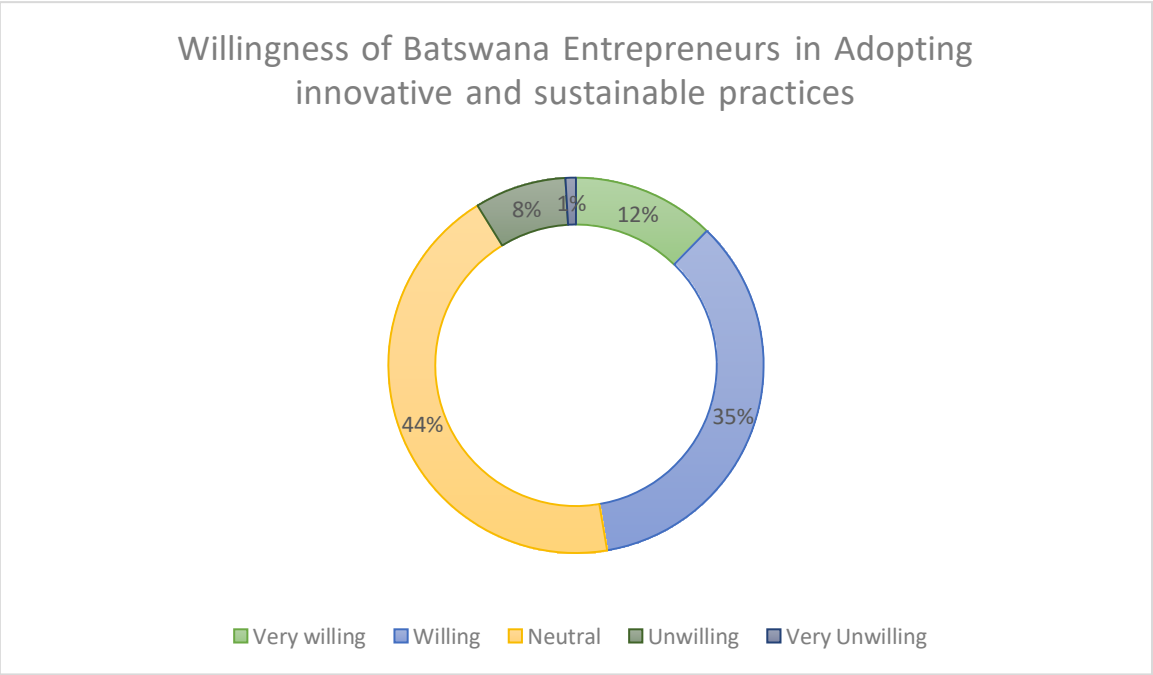
Insufficient Access to Information on Climate Change:

Insufficient access to information on climate change is identified as a key barrier by 56.6% of respondents. This underscores the importance of knowledge dissemination and awareness-raising initiatives to empower entrepreneurs with the information needed to understand climate change risks and opportunities. Efforts to address this barrier may involve developing tailored educational programs, workshops, and resources that provide entrepreneurs with practical insights into climate change impacts, adaptation strategies, and available support mechanisms. Collaborations between government, academic institutions, and civil society organizations can facilitate the dissemination of accurate and up-to-date information to entrepreneurs, enabling informed decision-making and proactive adaptation actions.

High Costs Associated with Sustainable Technologies:

Approximately 59.3% of respondents cite high costs associated with sustainable technologies as a significant barrier. This highlights the financial burden associated with adopting climate-resilient technologies and practices, which may deter entrepreneurs from investing in environmentally sustainable solutions. To overcome this barrier, interventions such as incentives, subsidies, and technology-sharing initiatives could help reduce the upfront costs of adopting sustainable technologies. Furthermore, promoting innovation and research in the development of affordable and accessible climate-smart solutions can facilitate widespread adoption among entrepreneurs, fostering a transition towards more sustainable business practices.

Figure 4.14 Analysis of Findings: Willingness of Entrepreneurs in Botswana to Adopt Innovative and Sustainable Practices



The survey results indicate a mixed response regarding the willingness of entrepreneurs in Botswana to adopt innovative and sustainable practices to mitigate the impacts of climate change on their businesses. While 12% of respondents express a "very willing" attitude towards adopting such practices, a larger proportion (35%) indicate that they are "willing" to do so. This suggests a significant portion of entrepreneurs are open to embracing innovative and sustainable solutions to address climate change challenges.

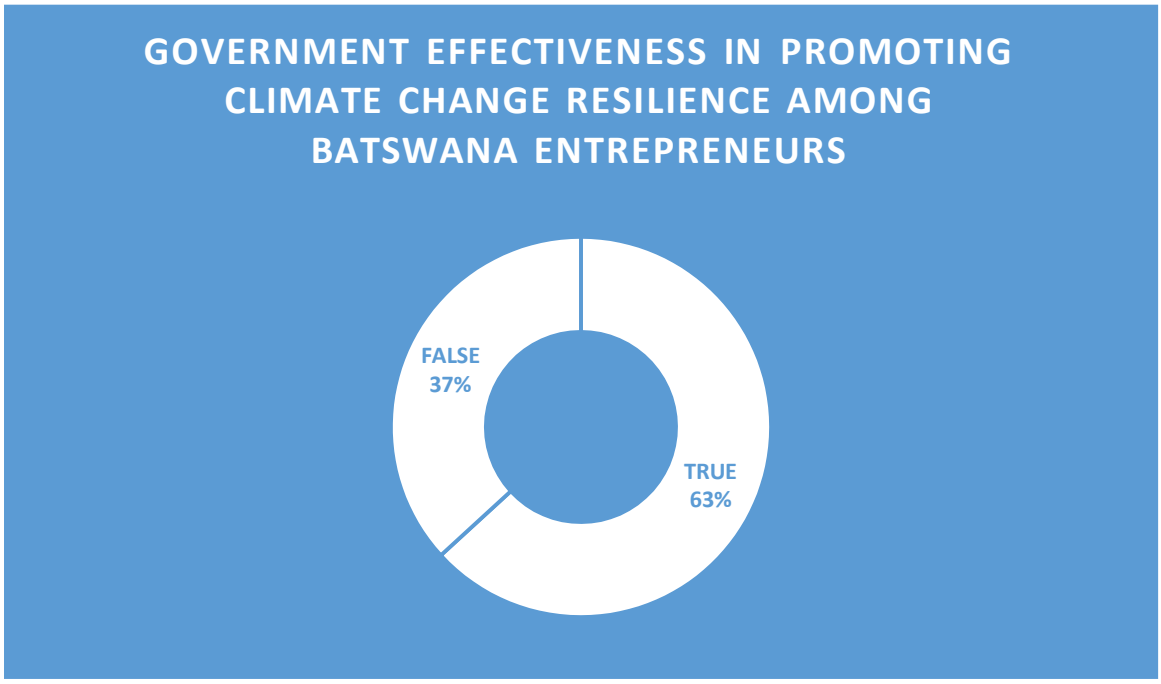
However, a notable percentage (44%) of respondents report feeling "neutral" about adopting these practices. This neutrality could stem from various factors, including limited awareness or understanding of the potential benefits of sustainable practices, concerns about the feasibility or cost-effectiveness of implementation, or a lack of clarity regarding available options and support mechanisms.

On the other hand, a smaller but noteworthy proportion of entrepreneurs express reluctance towards adopting innovative and sustainable practices, with 8% indicating that they are "unwilling" and another 12% reporting feeling "very unwilling." This reluctance may reflect concerns about the perceived risks or disruptions associated with transitioning to new practices, as well as skepticism about the efficacy or relevance of sustainable solutions in their specific business contexts.

Overall, while there is some willingness among entrepreneurs in Botswana to embrace innovative and sustainable practices, a significant proportion remains undecided or hesitant.

Addressing barriers such as limited awareness, financial constraints, and uncertainty about the practical implications of adopting these practices will be crucial in encouraging broader uptake and fostering a culture of sustainability within the entrepreneurial community. Efforts to provide education, training, and support tailored to the needs and preferences of entrepreneurs can help bridge knowledge gaps, alleviate concerns, and incentivize the adoption of innovative and sustainable solutions to mitigate the impacts of climate change.

Figure 4.15 Analysis of Findings: Effectiveness of Government Policies and Support Structures



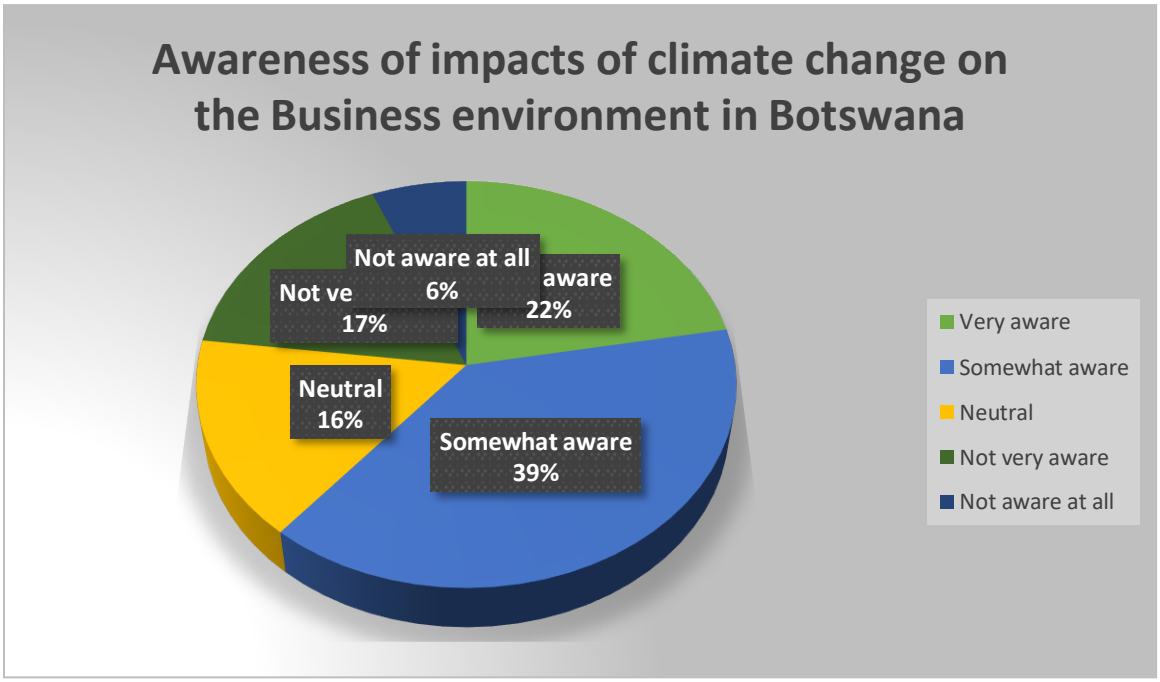
The survey results suggest a prevailing sentiment among entrepreneurs in Botswana regarding the effectiveness of government policies and support structures in promoting climate change resilience. A majority of respondents, constituting 63.2%, believe that these policies and support mechanisms are effective in fostering resilience among entrepreneurs in the face of climate change challenges.

This perception of effectiveness may stem from various factors, including tangible benefits experienced by entrepreneurs as a result of government interventions, such as financial incentives, subsidies, or regulatory frameworks that incentivize sustainable practices. Additionally, proactive government initiatives aimed at raising awareness, providing training and capacity-building opportunities, and facilitating access to resources and technologies may contribute to the positive perception of policy effectiveness among entrepreneurs.

However, it is notable that a significant minority, comprising 36.8% of respondents, hold the view that government policies and support structures are not effective in promoting climate change resilience among entrepreneurs. This dissenting perspective may reflect perceptions of inefficacy or inadequacy in existing policies, gaps in implementation or enforcement, or a lack of alignment with the specific needs and challenges faced by entrepreneurs in different sectors or regions.

Overall, while a majority of entrepreneurs acknowledge the positive impact of government policies and support structures on climate change resilience, a significant proportion remains skeptical or critical. Addressing concerns and addressing gaps in policy design, implementation, and enforcement will be crucial in ensuring that government interventions effectively support entrepreneurs in building resilience and adapting to climate change impacts. Collaborative efforts between government agencies, private sector stakeholders, and civil society organizations may be necessary to enhance policy coherence, responsiveness, and inclusivity, ultimately strengthening the resilience of Botswana's entrepreneurial ecosystem in the face of climate change challenges.

Figure 4.16 Analysis of Findings: Awareness of Climate Change Impacts on the Business Environment in Botswana



The survey results reveal varying levels of awareness among entrepreneurs in Botswana regarding the specific impacts of climate change on the business environment. While a notable

proportion of respondents indicate a moderate level of awareness, with 39% identifying themselves as "SOMEWHAT AWARE," a smaller but significant segment, comprising 22% of respondents, express a high level of awareness, categorizing themselves as "VERY AWARE."

This distribution of responses suggests a general recognition among entrepreneurs of the importance of understanding climate change impacts on the business environment. The proportion of respondents indicating a high level of awareness may indicate that a significant portion of entrepreneurs recognize the potential threats posed by climate change to their business operations, such as changes in weather patterns, water scarcity, and disruptions to supply chains.

However, it is also noteworthy that a considerable portion of respondents, accounting for 23% ("NOT VERY AWARE" and "NOT AWARE AT ALL" combined), indicate either limited awareness or a lack of awareness altogether regarding the specific impacts of climate change on the business environment in Botswana. This finding underscores the need for targeted awareness-raising efforts and education initiatives aimed at enhancing entrepreneurs' understanding of climate change risks and opportunities within the local business context.

Overall, while a substantial proportion of entrepreneurs demonstrate some degree of awareness regarding climate change impacts, there remains room for improvement in ensuring widespread understanding and preparedness within the entrepreneurial community. Enhancing awareness and knowledge-sharing platforms, providing relevant information and resources, and fostering collaboration among stakeholders may be essential strategies to address this gap and empower entrepreneurs to effectively respond to climate change challenges in Botswana's business landscape.

4.3 MAIN FINDINGS

Demographic Profile: The demographic profile suggests a diverse representation of Batswana entrepreneurs, with a notable presence of female entrepreneurs, a relatively young entrepreneurial demographic, a focus on local entrepreneurs, a high level of formal education among respondents, and a predominance of unmarried individuals. These demographic insights provide valuable context for understanding the entrepreneurial landscape in Botswana and may inform targeted interventions and support programs tailored to the specific needs of different demographic groups within the entrepreneurial community.

Awareness of Climate Change: A substantial proportion of entrepreneurs demonstrated awareness of climate change as a significant challenge to their entrepreneurial activities (65%). However, only half of the respondents reported considering climate change when making business decisions (50%), indicating potential gaps in integrating climate considerations into business strategies.

Perceived Threat of Climate Change: The majority of entrepreneurs recognized climate change as a significant threat to the long-term viability of businesses in Botswana (74%). This acknowledgment underscores the importance of proactive measures to address climate change impacts on business sustainability.

Government Support and Policies: A notable finding was the perceived inadequacy of government policies in supporting entrepreneurs in adapting to climate change, with a majority of respondents expressing skepticism (56%) about the effectiveness of existing policies.

Financial Constraints and Barriers: Financial constraints emerged as a significant barrier to climate change adaptation, with a majority of respondents (61.1%) identifying it as a primary challenge. Other notable barriers included limited access to information on climate change (56.6%) and the high costs associated with sustainable technologies (59.3%).

Willingness to Adapt and Innovate: Despite facing challenges, entrepreneurs expressed a willingness to adopt innovative and sustainable practices to mitigate the impacts of climate change on their businesses. A significant portion of respondents indicated a willingness to participate in training programs focused on climate change adaptation (86%) and prioritize climate change adaptation in their business decisions (50%).

Role of Entrepreneurship: The survey highlighted the perceived importance of entrepreneurship in addressing climate change challenges in Botswana, with the majority of respondents (59.3%) acknowledging its significant role in fostering resilience and innovation.

Overall, the findings underscore the complex interplay between awareness, government support, financial constraints, and entrepreneurial willingness to adapt to climate change. Addressing these challenges requires collaborative efforts from government, businesses, and other stakeholders to enhance awareness, provide adequate support, and foster a conducive environment for climate-resilient entrepreneurship in Botswana.

4.4 CHAPTER SUMMARY

The findings of the survey among Batswana entrepreneurs revealed a notable awareness of climate change as a significant challenge to their business activities, with a majority perceiving it as a threat to long-term viability. Despite this awareness, there were concerns regarding the adequacy of government policies and support structures in facilitating climate change adaptation. Financial constraints emerged as a prominent barrier, along with limited access to information and high costs associated with sustainable technologies. However, there was a clear willingness among entrepreneurs to adopt innovative and sustainable practices to mitigate climate change impacts. Overall, the findings highlight the importance of addressing barriers, enhancing support mechanisms, and fostering a climate-resilient entrepreneurial ecosystem in Botswana.

CHAPTER FIVE: DISCUSSION AND INTERPRETATION OF RESULTS

5.1 INTRODUCTION

Chapter Five delves into the discussion and interpretation of the results obtained from the data analysis conducted in this study. This section critically examines the findings in light of existing literature, providing insights into the implications, significance, and broader context of the research outcomes. Through a comprehensive discussion, key themes, patterns, and discrepancies are identified, contributing to a deeper understanding of the relationship between climate change and entrepreneurship in Botswana.

OBJECTIVE 1: To analyse the current level of awareness among Batswana entrepreneurs regarding climate change.

Objective 1 aimed to analyze the current level of awareness among Batswana entrepreneurs regarding climate change. The findings reveal that a significant portion of respondents demonstrated a moderate to high level of awareness regarding climate change. This suggests that there is a general recognition among entrepreneurs in Botswana about the existence and potential impacts of climate change on their businesses and the broader environment. However, a notable proportion of respondents also indicated varying degrees of uncertainty or lack of awareness about climate change issues. This highlights the need for targeted awareness campaigns and educational initiatives to further enhance the understanding of climate change among entrepreneurs in Botswana. Additionally, exploring the specific areas of climate change awareness where gaps exist can guide the development of tailored interventions to address these deficiencies effectively. Overall, the findings from Objective 1 underscore the importance of continuous efforts to raise awareness and promote climate change literacy among Batswana entrepreneurs to foster more proactive and sustainable business practices.

OBJECTIVE 2: To evaluate the existing adaptation strategies employed by Batswana entrepreneurs in response to climate change.

Objective 2 sought to evaluate the existing adaptation strategies employed by Batswana entrepreneurs in response to climate change. The findings indicate a diverse range of adaptation strategies being implemented by entrepreneurs, reflecting their efforts to mitigate the impacts of climate change on their businesses. These strategies encompass various measures such as crop diversification, water harvesting, investment in sustainable technologies, and adoption of

climate-resilient practices. The prevalence of these adaptation strategies underscores the proactive approach adopted by entrepreneurs in Botswana to address climate change challenges. However, it is essential to delve deeper into the effectiveness and scalability of these strategies, as well as the barriers hindering their implementation, to provide valuable insights for enhancing resilience and sustainability in entrepreneurial ventures. Furthermore, identifying innovative and context-specific adaptation approaches can further strengthen the adaptive capacity of Batswana entrepreneurs in the face of climate change uncertainties.

OBJECTIVE 3: To explore and identify the barriers hindering effective climate change adaptation among entrepreneurs in Botswana.

Objective 3 aimed to explore and identify the barriers hindering effective climate change adaptation among entrepreneurs in Botswana. The findings reveal several significant barriers that entrepreneurs face in their efforts to adapt to climate change. These barriers include financial constraints, unclear government policies, limited access to information on climate change, high costs associated with sustainable technologies, and difficulties in obtaining insurance coverage for climate-related risks. Additionally, the findings highlight the need for relevant training and education programs to enhance entrepreneurs' capacity to adapt to climate change. Addressing these barriers requires comprehensive policy interventions, targeted support mechanisms, and capacity-building initiatives tailored to the specific needs and challenges faced by entrepreneurs in Botswana. By addressing these barriers, policymakers and stakeholders can foster a conducive environment for entrepreneurial adaptation to climate change, thereby enhancing resilience and sustainability in the business sector.

The discussion and interpretation of the results shed light on the nuanced dynamics of climate change awareness and adaptation strategies among Batswana entrepreneurs. The high level of awareness among respondents regarding climate change as a significant challenge aligns with global trends, reflecting the growing recognition of climate-related risks to business operations. Despite this awareness, there are notable gaps in understanding the specific impacts of climate change on the business environment in Botswana, indicating a need for targeted education and awareness campaigns.

The findings also highlight the multifaceted barriers faced by entrepreneurs in adapting to climate change. Financial constraints emerged as a major challenge, underscoring the need for accessible financing mechanisms to support climate adaptation initiatives. Additionally, concerns regarding unclear government policies and limited access to information suggest the

importance of enhancing policy frameworks and knowledge dissemination channels to facilitate informed decision-making.

Interestingly, while there are barriers to adaptation, the willingness of entrepreneurs to adopt innovative and sustainable practices signifies a proactive approach to addressing climate change challenges. This presents an opportunity for collaboration between government, private sector, and civil society stakeholders to promote the adoption of climate-resilient technologies and practices.

Moreover, the findings underscore the pivotal role of government policies and support structures in fostering climate resilience among entrepreneurs. The majority of respondents expressed confidence in the effectiveness of government interventions, suggesting a positive outlook on the potential impact of policy initiatives. However, this optimism should be balanced with ongoing efforts to enhance policy coherence, transparency, and stakeholder engagement to ensure the equitable distribution of resources and support.

Overall, the discussion emphasizes the importance of holistic approaches to climate change adaptation, encompassing financial, regulatory, educational, and technological dimensions. By addressing barriers, leveraging opportunities, and fostering collaboration, Botswana can enhance the resilience of its entrepreneurial ecosystem and contribute to sustainable development in the face of climate change.

CHAPTER SIX: CONCLUSION AND RECOMMENDATION

CONCLUSION

In conclusion, this study provides valuable insights into the awareness, adaptation strategies, and barriers hindering effective climate change adaptation among Batswana entrepreneurs. The findings underscore the significance of climate change as a critical challenge facing businesses in Botswana and highlight the need for concerted efforts to address this issue. Despite the high level of awareness among entrepreneurs, there is a clear gap between awareness and action, with many entrepreneurs facing barriers that hinder their ability to adapt effectively. Addressing these barriers requires collaborative efforts from government, businesses, and other stakeholders to provide the necessary support, resources, and policies to facilitate climate change adaptation in the entrepreneurial sector. By fostering a conducive environment for adaptation, Botswana can enhance the resilience of its businesses and contribute to sustainable development in the face of climate change challenges.

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In conclusion, the discussion emphasizes the importance of holistic approaches to climate change adaptation, encompassing financial, regulatory, educational, and technological dimensions. By addressing barriers, leveraging opportunities, and fostering collaboration, Botswana can enhance the resilience of its entrepreneurial ecosystem and contribute to sustainable development in the face of climate change.

RECOMMENDATIONS

Based on the findings of this study, several recommendations are proposed to enhance climate resilience among Batswana entrepreneurs:

1. Policy Alignment: Government policies should be tailored to support climate change adaptation efforts among entrepreneurs. This includes clear and consistent regulations, financial incentives, and support programs aimed at promoting sustainable practices.

2. Capacity Building: There is a need for capacity-building initiatives to enhance awareness and knowledge of climate change impacts and adaptation strategies among entrepreneurs. Training programs, workshops, and educational campaigns can empower entrepreneurs to make informed decisions and adopt innovative solutions.

3. Financial Support: Access to financial resources remains a significant barrier to climate adaptation. Financial institutions, government agencies, and international organizations should collaborate to provide affordable loans, grants, and subsidies for climate-resilient investments.

4. Information Dissemination: Efforts should be made to improve access to information on climate change, including its specific impacts on different sectors and available adaptation measures. This could involve the development of online platforms, knowledge sharing networks, and outreach programs targeting entrepreneurs.

5. Public-Private Partnerships: Collaboration between government, private sector, and civil society organizations is essential to address the complex challenges of climate change. Public-private partnerships can facilitate resource mobilization, knowledge exchange, and the implementation of joint initiatives for climate resilience.

6. Innovation Support: Governments and research institutions should promote innovation in climate-resilient technologies and practices. This could involve funding research and development projects, providing incubation support for green start-ups, and fostering a culture of innovation and entrepreneurship.

AREAS FOR FURTHER STUDY

While this study offers valuable insights into the climate change adaptation strategies of Batswana entrepreneurs, there remain numerous avenues for additional research to deepen our understanding and address lingering knowledge gaps. Future research could explore into the longitudinal effectiveness of adaptation strategies over time, monitoring the outcomes and impacts of various initiatives implemented by entrepreneurs. Additionally, qualitative research methodologies such as interviews and focus group discussions could provide richer insights into the motivations, challenges, and decision-making processes of entrepreneurs regarding climate change adaptation. Furthermore, comparative studies across different sectors and regions within Botswana could offer nuanced insights into sector-specific challenges and opportunities for climate resilience. Finally, exploring the role of cross-sectoral collaboration and partnerships in facilitating climate change adaptation among entrepreneurs could uncover innovative approaches to address complex challenges. By delving into these areas, scholars can contribute to a more comprehensive understanding of climate change adaptation dynamics in Botswana and inform targeted interventions to support entrepreneurial resilience.

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APPENDICES

APPENDIX 1: Consent form

CONSENT FORM

PROJECT TITLE: Assessing the Adaptation of Botswana Entrepreneurs to Climate Change: Strategies for Sustainable Resilience and Innovation

Principal Investigator SAME ONNEILE OITSILE
Phone number(s): 77604921 / 77420157/ 73001293

INTRODUCTION

You are invited to participate in the research study titled "Assessing the Adaptation of Botswana Entrepreneurs to Climate Change: Strategies for Sustainable Resilience and Innovation." This study aims to investigate the adaptation strategies employed by entrepreneurs in Botswana in response to climate change challenges. Your participation is entirely voluntary, and this form provides you with essential information about the study.

What you should know about this research study:

1. We give you this informed consent document so that you may readabout the purpose, risks, and benefits of this research study.
2. You have the right to refuse to take part, or agree to take part now andchange your mind later.
3. Please review this consent form carefully. Ask any questions before youmake a decision.
4. Your participation is voluntary.

PURPOSE

The primary goal of this study is to contribute to the understanding of how entrepreneurs in Botswana are adapting to the impacts of climate change. By participating, you provide valuable insights into the strategies, challenges, and innovative solutions implemented by entrepreneurs in response to changing climatic conditions. You were selected as a possible participant in this study because you are a Business Owner/ an Entrepreneur in Botswana. Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take asmuch time as necessary to think it over.

PROCEDURES AND DURATION

If you agree to participate, you will be asked to complete a questionnaire designed togather information about your experiences, challenges, and strategies related to climate change adaptation. Your responses will be confidential, and the data will be used solely for research purposes. This will not take more than 5 minutes of your time.

RISKS AND BENEFITS
Participation in this study involves minimal risk, as the questionnaire is structured to collect general information about your experiences with climate change adaptation. The potential benefit lies in contributing to a better understanding of the adaptive strategies employed by entrepreneurs in Botswana, which may inform future policies and interventions.

CONFIDENTIALITY
Your privacy is of utmost importance. All information collected will be treated withstrict confidentiality. No personally identifiable information will be disclosed in any publication or presentation resulting from this study.

VOLUNTARY PARTICIPATION
Participation in this study is voluntary. If you decide not to participate in this study, your decision will not affect your future relations with the European Business University, its personnel, and associated institutions**.** If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time withoutpenalty.

CONSENT
I have read and understood the information provided above. I voluntarily agree to participate in the research study "Assessing the Adaptation of Botswana Entrepreneurs to Climate Change: Strategies for Sustainable Resilience and Innovation."

AUTHORIZATION
You are making a decision whether or not to participate in this study. Your signature indicates that you have read and understood the information provided above, have had all your questions answered, and have decided to participate.

_____ _____
Name of Research Participant (please print) Date

_____ _____
Signature of Principal Investigator Date

YOU WILL BE GIVEN A COPY OF THIS CONSENT FORM TO KEEP.
If you have any questions concerning this study or consent form beyond those answered by the investigator, including questions about the research, your rights asa research participant; or if you feel that you have been treated unfairly and would like to talk to someone other than the Principal Investigator, please feel free to contact the Supervisor, Mr Basupi, phone: +267 71769996, email: basupib@ub.ac.bw

APPENDIX 2: Questionnaire

QUESTIONNAIRE: Assessing the Adaptation of Batswana Entrepreneurs to Climate Change: Strategies for Sustainable Resilience and Innovation

Hi. My name is Same Onneile Oitsile, a final year student from the European Business University currently studying Masters of Business Administration. I am carrying out a research on, '"Assessing the Adaptation of Batswana Entrepreneurs to Climate Change: Strategies for Sustainable Resilience", and you are invited to participate in this survey. It will take approximately 5-10 minutes to complete the questionnaire.

The main aim of this thesis is to provide a comprehensive understanding of sustainable entrepreneurship role in addressing climate change and sustainability challenges. It aims to shed light on the motivations, strategies, challenges, and impacts of sustainable entrepreneurship ventures and offer practical insights for entrepreneurs, policymakers, and investors interested in promoting sustainability and resilience in the face of the climate crisis in Botswana.

Your participation in this study is completely voluntary. There are no foreseeable risks associated with this project. However, if you feel uncomfortable answering any question you can skip it or withdraw from the survey at any point. But if you do choose to participate, I assure you that your answers will be used for this research only and will strictly be confidential. Your participation in this research will be highly appreciated. Please kindly fill in the questionnaire below.

1. **General information (Tick appropriate box (√)) Age:**

   Mark only one oval.

   - ◯ 18-25
   - ◯ 26-35
   - ◯ 36-45
   - ◯ 46-59
   - ◯ 60 & Above

2. 2. Gender:

   Mark only one oval.

   - ◯ Female
   - ◯ Male
   - ◯ Prefer not to say

3. 3. Citizenship:

Mark only one oval.

- ◯ Citizen
- ◯ Non-citizen

4. 4. Highest level of education;

Mark only one oval.

- ◯ Primary
- ◯ Lower secondary school
- ◯ Upper secondary school
- ◯ University
- ◯ Other

5. 5. Marital status:

Mark only one oval.

- ◯ Single
- ◯ Married
- ◯ Divorced
- ◯ Widowed
- ◯ other

section 2

For the next section, please tick (√) either YES, if you agree with the statement, or NO, if you disagree.

6. 1. Do you currently consider climate change when making business decisions?

   Mark only one oval.

   - YES
   - NO
   - Maybe

7. 2. Do you perceive climate change as a significant challenge to your entrepreneurial activities?

   Mark only one oval.

   - YES
   - NO
   - Maybe

8. 3. Have you faced challenges in accessing financial resources to support climate change adaptation measures in your business?

   Mark only one oval.

   - YES
   - NO
   - Maybe

9. 4. Do you believe that government policies adequately support entrepreneurs in adapting to climate change?

   Mark only one oval.

   - YES
   - NO
   - Maybe

10. 5. Do you believe that climate change poses a significant threat to the long-term viability of businesses in Botswana?

Mark only one oval.

- ◯ YES
- ◯ NO
- ◯ Maybe

11. 6. Would you be interested in participating in training programs focused on climate change adaptation for entrepreneurs?

Mark only one oval.

- ◯ YES
- ◯ NO
- ◯ Maybe

Section 3

For the next part of the questionnaire, please tick (√) the best box which best describes the extent to which you either agree or disagree. (5=strongly agree, 4=Agree, 3=Neutral, 2=Disagree, 1=strongly disagree)

12. 1. The government provides sufficient incentives for entrepreneurs to adopt sustainable practices in response to climate change.

Mark only one oval.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly disagree

13. 2. Climate change adaptation requires significant financial investments that may pose challenges for small businesses.

Mark only one oval.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

14. 3. Sustainable business practices have a positive impact on long-term profitability.

Mark only one oval.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

15. 4. Climate change adaptation is a shared responsibility between the government, businesses, and the wider community.

Mark only one oval.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

16. 5. Entrepreneurs who prioritize climate change adaptation are more likely to gain a competitive advantage in the market.

Mark only one oval.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly disagree

Section 4

For the next section, please select appropriate box

17. 1. To what extent do you believe that entrepreneurship can play a role in addressing climate change challenges in Botswana?

Mark only one oval.

- ◯ HIGH
- ◯ MEDIUM
- ◯ LOW

18. 2. In your opinion, what are the most significant barriers for entrepreneurs in Botswana when it comes to adapting to climate change? (Tick more than one)

Check all that apply.

- ☐ Financial constraints
- ☐ Unclear government policies
- ☐ Insufficient access to information on climate change
- ☐ High costs associated with sustainable technologies
- ☐ Limited access to relevant training and education programs
- ☐ Difficulty in obtaining insurance coverage for climate-related risks

19. 3. How willing are entrepreneurs in Botswana to adopt innovative and sustainable practices to mitigate the impacts of climate change on their businesses?

Mark only one oval.

- ◯ Very willing
- ◯ Willing
- ◯ Neutral
- ◯ Unwilling
- ◯ Very unwilling

20. 4. Government policies and support structures are effective in promoting climate change resilience among entrepreneurs in Botswana.

Mark only one oval.

- ◯ True
- ◯ False

21. 5. How aware are you of the specific impacts of climate change on the business environment in Botswana?

Mark only one oval.

- ◯ Very aware
- ◯ Somewhat aware
- ◯ Neutral
- ◯ Not very aware
- ◯ Not aware at all