



JÖNKÖPING UNIVERSITY

*Jönköping International
Business School*

The Next Frontier: Enabling Sustainable Entrepreneurs in Sub-Saharan Africa.

An empirical investigation on the drivers of sustainable entrepreneurship in Sub-Saharan ecosystems, and the enablement of solutions for Grand Challenges.

MASTER DEGREE PROJECT

THESIS WITHIN: *Business Administration*

NUMBER OF CREDITS: 30

PROGRAMME OF STUDY: *Strategic Entrepreneurship*

AUTHOR: *Elena Ahlgrimm & Kjell Hendriks*

WORD COUNT: 26,891

JÖNKÖPING 05.2023

Acknowledgements


First and foremost, we want to thank all of our participants for their constant dedication to this thesis study. By trusting us and sharing personal experiences on the entrepreneurial activities in SSA, we were able to broaden our horizons and raise attention to inspiring stories of some of the most captivating role models in sustainable entrepreneurship. Your transparency and honest communication made it easy to be enthusiastic about our thesis topic and develop core passions for our future direction in the field of entrepreneurship.

Moreover, our sincerest gratitude goes to our supervisor, Leona Achtenhagen. Your weekly feedback and insightful takes on our thesis study enriched the potential to contribute to sustainable entrepreneurship. Your diligence and expertise on various topics brought in new perspectives and gave us the needed objectivity to progress our ideas into viable constructs. Most importantly, we appreciate your open-mindedness, which gave us the liberty to follow our personal ambitions and combine our core beliefs on the future of entrepreneurship with a dutiful academic conduct.

Lastly, we want to give thanks to our families for standing by us throughout the thesis process and providing us with emotional support, structural feedback, and the many other forms of care. Your presence in our lives every day and your continuous support of our personal and academic decisions makes us proud to call you family. To our partners, we express our love and appreciation. Talking through our ideas and getting constructive feedback on a day-by-day basis gave us the vigor to continue throughout this semester. We could not have done it without you.



Kjel Hendriks



Elena Ahlgrimm

Master Thesis in Business Administration

Title: The Next Frontier: Enabling Sustainable Entrepreneurs in SSA

Authors: Elena Ahlgrimm & Kjel Hendriks

Supervisor: Leona Achtenhagen

Date: 2023-05-21

Key terms: Sustainable Entrepreneurship, External Enablers, Entrepreneurial Ecosystems, Grand Challenges, Sub-Saharan Africa, Ecosystem Builders

Abstract

Research Background: Climate change poses a core threat to the current and future welfare of society. Sub-Saharan Africa is particularly susceptible to challenges associated with climate change, most of which are bound to have large-scale societal impacts. Fortunately, Grand Challenges (GCs) can also enable opportunities for sustainable entrepreneurship to emerge. As entrepreneurs work in larger interrelated ecosystems, it is noteworthy to explore the utilization of ecosystems to develop sustainable ventures that address GCs. Current research has not addressed the interplay between external enablers and entrepreneurial ecosystems, especially in the Sub-Saharan context. The focus of this study is to explore how sustainable entrepreneurs acted on GCs in the pursuit of venture opportunities, and how ecosystems were utilized to foster the development of entrepreneurial agents and their ventures.

Research Purpose: The purpose of this research is to identify how GCs facilitate sustainable entrepreneurship in Sub-Saharan Africa, given the interaction between entrepreneurs, their ecosystems, and climate change-associated GCs.

Method: The research paradigm for this study follows critical realism. Meaning, we question the nature of reality as inherently multilayered and align with epistemic relativism. An explorative interview-based study was adopted for our methodology. We sampled our interview candidates purposively through the formation of several criteria. In total, we collected data from 20 semi-structured interviews through online platforms. We analyzed our data by interpreting principles of thematic analysis and the theory-building approach, to connect empirical themes to theoretical constructs.

Conclusion: The results for this study show that sustainable entrepreneurs act on a wide variety of GCs. Within ecosystems, we noticed that sustainable development, cultural belief systems, educational infrastructure, governance, and resource accessibility influence the potential for ecosystems to develop. Specifically, we adopted three dimensions in which these pillars have influences: the entrepreneurial, communal, and structural level. The findings indicated that the scope of external enablers is fluid due to ecosystem interactions. Moreover, opacity and agency-intensity of enabling mechanisms can be reduced by developing entrepreneurial ecosystems. We also noted that entrepreneurs themselves can take on the role of ecosystem-builders. Our findings revised current understandings of sustainable entrepreneurship and redefined the concept to create a more inclusive label.

Table of Contents

1. Introduction.....	1
1.1. Background	1
1.2. Problem Formulation.....	2
1.3. Overview of the Study	4
2. Literature Review	5
2.1. External Enabler Framework.....	5
2.1.1 Characteristics	6
2.1.2. Mechanisms.....	7
2.1.3. Roles.....	9
2.2. Sustainable Entrepreneurship	10
2.2.1 Classifications of Sustainable Entrepreneurship.....	10
2.2.2. The Role of Sustainable Entrepreneurship in Society.....	12
2.3 Entrepreneurial Ecosystems	14
2.3.1. Attributes of Entrepreneurial Ecosystems.....	14
2.3.2. Sustainable Entrepreneurial Ecosystems	16
2.4 Area of Research	17
2.4.1. Research Gaps.....	17
2.4.2. Research Purpose	19
3. Empirical Context and Method	21
3.1. Empirical Context	21
3.2. Research Paradigm.....	22
3.2.1 Research Ontology	23
3.2.2. Research Epistemology	24
3.2.3. Research Axiology	25
3.2.4. Research Methodology.....	26
3.3. Research Design.....	27
3.4. Sampling Strategy	28
3.5. Data Collection.....	29
3.5.1. Overview of Data	29
3.5.2. Interview Design.....	32
3.6. Data Analysis	33
3.6.1. Choice of Analysis	33
3.6.2. Analysis Approach	35
3.7. Ethical Considerations.....	37
3.7.1. Ethical Principles of Management Research	37
3.7.2. Trustworthiness in Research.....	39
4. Findings	42
4.1. Grand Challenges as Enablers	43
4.2. Sustainable Development	46
4.3. Cultural Belief Systems.....	50
4.4. Educational Infrastructure	55

4.5 Governance.....	60
4.6. Resource Accessibility	65
5. Discussion	71
5.1. Contribution to the EE Framework	71
5.2. Contribution to Sustainable Entrepreneurial Ecosystems.....	76
5.3. Contributions to Sustainable Entrepreneurship	78
6. Conclusion	81
6.1. Theoretical Contributions.....	82
6.2. Practical Implications	83
6.3. Strengths and Limitations.....	85
6.4. Areas of Future Research	86
Reference list.....	88
Appendices.....	98
Appendix A – GDPR consent form.....	98
Appendix B – Interview Guide for Entrepreneurs.....	99
Appendix C – Interview Guide for Researchers.....	100
Appendix D – Coding Structure.....	101

Figures

Figure 1: External Enabler Framework.....	6
Figure 2: Sustainable Entrepreneurial Ecosystem.....	43
Figure 3: Interplay between EE and Sustainable Entrepreneurial Ecosystems	75

Tables

Table 1: Overview of Participants.....	31
Table 2: Approach to Data Analysis	35
Table 3: Ethical Principles	37
Table 4: Overview Grand Challenges	46
Table 5: Overview Sustainable Development	50
Table 6: Overview Cultural Belief Systems.....	55
Table 7: Overview Educational Infrastructure	60
Table 8: Overview Governance.....	65
Table 9: Resource Accessibility	70
Table 10: Overview of EE Mechanisms.....	74

Abbreviations

EE(s)	External Enabler(s)
GC(s)	Grand Challenge(s)
SSA	Sub-Saharan Africa

1. Introduction

The contents of this chapter argue that grand challenges associated with climate change are especially relevant for Sub-Saharan Africa. While overall negative, grand challenges can pose as external enablers by partially enabling specific entrepreneurs. Specifically, sustainable entrepreneurs may be best suited to be enabled by grand challenges. However, the success of sustainable entrepreneurs relies on their ecosystems. We note that the comprehensive contributions in entrepreneurial ecosystem and external enabler literature, so far, have gone uncombined. Moreover, consideration of sustainability dimensions in both fields has been overlooked. Therefore, we advocate for increased focus on these topics and demonstrate how our study aligns with these intents.

1.1. Background

Today, it is widely understood that climate change has cataclysmic effects on the welfare of current and future societies. Global temperatures are increasing, extreme weather changes are disastrous for many areas, and those with vulnerable institutional environments witness more intense effects (Maino & Emrullahu, 2022). Sub-Saharan Africa (SSA) is especially hindered by climate change (Rigaud et al., 2021; Turco et al., 2015). By 2050, over a third of global climate migrants would be Sub-Saharan residents forced to move within or out of their country (Viviane et al., 2021). Moreover, high poverty and unemployment remains to cause socio-economic challenges (The World Bank, 2020; The World Bank, 2022). Further, stifled progress in health, education, and quality of life burdens the overall population (UNDP, 2022). As such, climate change effects extend beyond environmental degradation and influence the social and economic stability of many regions.

To combat grand challenges (GCs) associated with climate change, the region requires sustainable development through policy and technological adjustments (Müller et al., 2014). GCs are “specific critical barriers that, if removed, would help solve an important societal problem with a high likelihood of global impact through widespread implements” (George et al. 2016, p.1881). For instance, poverty, water conservation, and climate volatility are some of the many challenges identified as large-scale societal problems that require complex solutions (United Nations, 2015). The classification of GCs is thus loosely defined and subject to interpretation.

However hard it may be to find positives in these catastrophic indicators, there are opportunities to be uncovered. Specifically, the presence of GCs in the Sub-Saharan context could inspire entrepreneurial development. GCs could therefore be seen as external events that partially enable entrepreneurial agents. External enablers (EEs) are

external aggregate-level events that have the potential to stimulate a variety of entrepreneurial initiatives from different actors (Davidsson, 2015; Davidsson et al., 2020; Kimjeon & Davidsson, 2021). In other words, EEs may create business opportunities for a select group of entrepreneurs. The notion of EEs as important drivers for entrepreneurship has been extensively summarized by Davidsson et al.'s (2020) EE Framework.

Sustainable entrepreneurship is an entrepreneurial cohort that has seen recent importance among researchers (Muñoz & Cohen, 2017; Stubbs, 2016; Belz & Binder, 2015). Sustainable entrepreneurship stands out from traditional entrepreneurship, as future entrepreneurial opportunities should meet economic, social, and environmental standards (Shepherd & Patzelt, 2011). Notably, solutions that target sustainability challenges often emerge from the inclusion of many different stakeholders (Audretsch et al., 2021). Thus, sustainable entrepreneurs are best suited to respond to GCs with high-potential solutions when they initiate environmental and social change through ecosystem interactions.

Given the contextual concerns in SSA, the development of sustainable entrepreneurship is of utmost importance. However, sustainable entrepreneurs are influenced by their contextual environment (Bischoff & Volkmann, 2018; Pankov et al., 2019), which may affect the degree to which agents are enabled by external events. Thus, within sustainable entrepreneurial enablement, the role of ecosystem interactions may be essential in carrying out high-potential solutions. These dynamics may further explain how GCs interact with entrepreneurs, and how sustainable entrepreneurs address these challenges.

1.2. Problem Formulation

The EE Framework has received considerable attention since its initial introduction. Accordingly, various researchers have developed the framework (cf. von Briel et al., 2017; Davidsson et al., 2020, Kimjeon & Davidsson, 2021). There are also several empirical studies that explore the idea of EEs in a certain context (e.g., Chen et al., 2020, McGee & Terry, 2022), or by a specific agent cohort (e.g., Chalmers et al., 2019; Chalmers et al., 2020; Schade & Schuhmacher, 2022). The increased attention to the EE Framework has contributed to its applicability and validity.

Simultaneously, ecosystem research is on the rise and has been developing over the last decade (cf. Isenberg, 2010; Stam, 2015; Spigel, 2017; Wurth et al., 2022). Multiple researchers have investigated the domains that define entrepreneurial ecosystems (e.g., Isenberg, 2010, Spigel, 2017), highlighted the interactional nature of ecosystems (e.g., Alvedalen & Boschma, 2017; Bischoff & Volkmann, 2018; Malecki, 2018), or investigated specific cohorts that are part of entrepreneurial ecosystems (e.g., Audretsch et al., 2021; Cohen, 2005; Theodoraki et al., 2017; Volkmann et al., 2019). The development of ecosystems literature has contributed to the generalizability and transferability of ecosystem concepts.

However, entrepreneurial ecosystems have not yet been studied under the premise of EEs. Even more so, EE literature has underlined that further research can investigate how they influence different cohorts of entrepreneurs (Manochoa et al., 2021), while entrepreneurial ecosystems studies could be enriched by studies on sustainability-related dimensions relevant for the development of ecosystems (Bischoff & Volkmann, 2018; Neumeyer & Santos, 2018; Volkmann et al., 2019). Therefore, we pose that the investigation of both EEs and ecosystems elements can contribute to both streams of research. Moreover, by committing to a sustainability perspective, a better understanding of the environment for sustainable entrepreneurial activity can be formed.

Regarding scope, greater emphasis should be placed on SSA as a region of interest. So far, the EE Framework has been applied globally (Davidsson et al., 2021), across countries (Schade & Schuhmacher, 2022), or focused on the U.S (Bennett, 2019a; 2019b), China (Chen et al., 2020; Yang et al., 2019), or Europe (Hinderer & Kuckertz, 2022). Moreover, limited research has focused on the context-specific nature of entrepreneurial ecosystems (Cavallo et al., 2018; Stam & Van de Ven, 2019; Volkmann et al., 2019; Wurth et al., 2022). Given that GCs should be investigated in the context of developing countries (Jamali et al., 2021), we suggest that this presents an underrepresented area of research, especially in the scope of sustainable entrepreneurs. Thus, the investigation of grand challenges in Sub-Saharan Africa may exemplify the degree to which they serve as EEs, and how they form different contexts for entrepreneurial ecosystems.

1.3. Overview of the Study

The purpose of this research study is to identify how sustainable entrepreneurs in Sub-Saharan Africa form entrepreneurial activities to mitigate Grand Challenges, and how they utilize their ecosystems in their pursuit to do so. As such, we recognize the External Enablement Framework, entrepreneurial ecosystem, and sustainable entrepreneurship literature as complementary to our research inquiry. The second chapter will provide a comprehensive overview of the major literary themes and summarize the current gaps relevant for this research. Subsequently, the research purpose and question will be presented.

The third chapter relates the explored literature to the Sub-Saharan context and suggests why the convergence of sustainable entrepreneurial ecosystems and EEs may be particularly suited. A description of the critical realist position in this study follows. Next, the methods for conducting the study, including the sampling strategy, data collection process, and data analysis are explained. We end the third chapter by reviewing the steps taken to ensure ethical behavior, and by assessing the quality of our research.

The fourth chapter provides a summation of the determined findings in relation to the research purpose. Here we identify that sustainable entrepreneurial ecosystems indulge in five thematic pillars: sustainability, culture, education, governance, and resource accessibility. Notably, we identify that these pillars extend to three different dimensions within the ecosystem, namely the entrepreneurial, communal, and structural dimension.

The fifth chapter compares our findings to existing literature to determine the contributions our findings make. We present a model that integrates EEs and entrepreneurial ecosystems. Specifically, we exemplify how sustainable entrepreneurial ecosystems reinforce sustainable belief systems within communities and reduce the opacity and agency-intensity of enabling opportunities. We also redefine sustainable entrepreneurship to better capture the sentiments held by our participants.

The sixth chapter summarizes our findings and contributions by answering our research question. We also discuss theoretical and practical implications, express the strengths and limitations of the conducted research, and encourage areas of future research.

2. Literature Review

The contents of this chapter capture the major streams of literature relevant for this study. First, we discuss how different facets of the External Enabler Framework interact with entrepreneurial agents. Secondly, we introduce the cohort of sustainable entrepreneurship to exemplify the difference between sustainable and conventional entrepreneurial activities. Focusing on sustainable entrepreneurship also allows for the investigation of sustainable entrepreneurial ecosystems, which help with the realization of sustainable entrepreneurial outcomes. Before discussing sustainable entrepreneurial ecosystems, a comparison with conventional entrepreneurial ecosystems is made. Lastly, we explain how the major gaps in current literature translate to our specific research purpose. Connecting external enablers, sustainable ecosystems, and entrepreneurial agents allows us to direct our research with one guiding research question.

2.1. External Enabler Framework

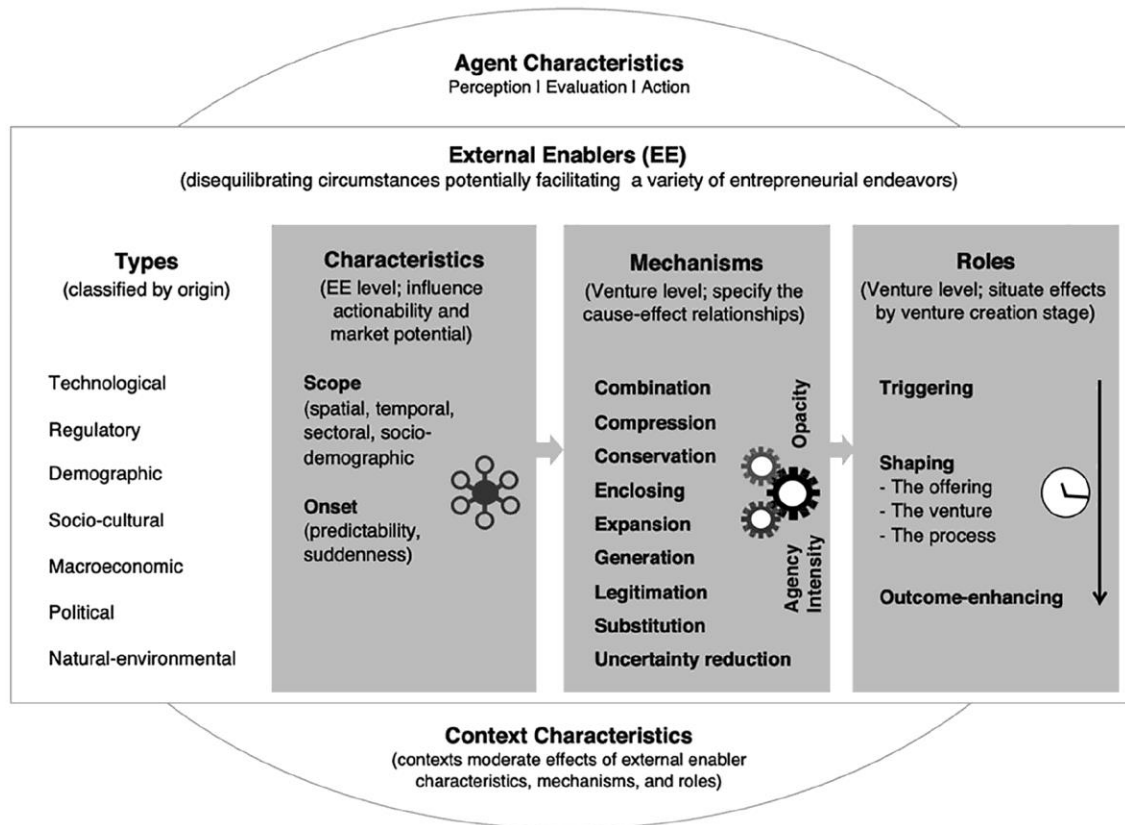
Certain external conditions change the business environment and positively influence the outcome of some entrepreneurial initiatives (Davidsson et al., 2020; McGee & Terry, 2022). This summarizes the EE Framework, conceptualized by Davidsson et al. (2020). The EE Framework encourages research into an underexplored facet of entrepreneurial theory, as incompatibility hinders extant theoretical concepts (Chalmers et al., 2019). For that reason, research on how externalities can promote new venture creation offers a novel approach to study entrepreneurship through various empirical grounds.

The EE Framework has its origins in entrepreneurial opportunities. Traditionally, entrepreneurial opportunities are created (Alvarez et al., 2013; Alvarez & Barney, 2007; Schumpeter, 1934), or discovered (Kirnzer, 1973; Shane & Venkataraman, 2000; Shane, 2012). More recently, opportunities have been viewed as subjective and unique to the entrepreneur and change throughout the entrepreneurial process (Dimov, 2011; Sarason et al. 2006; Sarason et al., 2010).

Rather than solely considering the actor, Davidsson (2015) chose to present entrepreneurial opportunity as a combination of EEs, new venture ideas, and opportunity confidence. While the latter two terms are equally applicable to understanding entrepreneurial behavior, our emphasis lies with the definition of EEs – “A single, distinct, external circumstance, which has the potential of playing an essential role in eliciting and/or enabling a variety of entrepreneurial endeavors by several (potential) actors” (Davidsson, 2015, p.683). These circumstances can be political changes, technological innovations, demographic movements, regulatory shifts, and adjustments in the sociocultural, socio-economic, and socio-natural environment, and all enable entrepreneurship in distinct ways (Davidsson et al., 2020). Thus, EEs have a typified

origin, and consequently create variances in characteristics, mechanisms, and roles (Figure 1).

Figure 1: External Enabler Framework by Davidsson et al. (2020, p.315)



2.1.1 Characteristics

Characteristics encompass the nature of an EE and highlight the properties that structure its existence (Davidsson et al., 2020). Enablers are defined by two varying features, their scope and onset (Kimjeon & Davidsson, 2021). Scope is the degree to which EEs affect the potential of new ventures in terms of sectoral, spatial, temporal, and sociodemographic range; onset describes the degree of abruptness and expectedness within an enabler (Davidsson et al., 2020).

For instance, the larger the scope, the larger the magnitude on venture creation (Wood et al., 2022). The claim that a larger spatial scope implies a greater magnitude is also understood by Chen et al. (2020), who contend that EEs with a more dispersed spatial scope may help lessen regional differences in terms of entrepreneurial entry. Further, Davidsson et al. (2021) considered COVID-19 to be a global impact but noted that the

people (socio-demographic) and industries (sectoral) that were affected varied considerably.

Within digital environments, Chalmers et al. (2020) note that the temporal and spatial boundaries of entrepreneurial initiatives are becoming more fluid. The development of digital technologies has driven the opportunity of venture creation from unviable to viable in a short amount of time (Chalmers et al., 2019). Moreover, digitalization expands the socio-demographic scope, as relational interactions between different actors are a facilitating influence on venture creation (von Briel et al., 2017). In this regard, Chalmers et al. (2019) specified that ideological beliefs partially drove enablement of new ventures. Given that certain social movements aim to adopt, mobilize, and create acceptance for new markets (Weber et al., 2008), studies that target sustainable development offer a fruitful area of research to discover the interplay of different scope characteristics.

Some enablers happen suddenly and cannot be accounted for, while others are the result of meticulous processes and lengthy procedures. Notably, climate change and its consequences vary drastically in suddenness and predictability. Davidsson et al. (2020, p. 316) note that global warming itself can “affect economic life for generations” while potential events resultant from climate change (i.e., “El Niño/La Niña”) are cyclical and circumstantial. As such, one can denote that the climate change phenomenon is gradual and somewhat predictable, while its events are sudden and unpredictable. Given the variance that potential enablers can be characterized by, the EE Framework allows researchers to explore the effect and magnitude of external changes on the framing of business environments.

2.1.2. Mechanisms

Mechanisms are the functions of external enablement that explain the initiation, development, and success of business venture creation (Davidsson et al., 2020). In other words, they shape the cause-effect relationship between the enabler (cause) and venture creation (effect) (von Briel et al., 2017). Importantly, mechanisms are unactualized: they provide a possibility for venture-level benefits, but undisclosed actor-dependent and independent reasons may hinder the realization of said benefits (Wood et al., 2022). For that reason, mechanisms are structural intermediaries; only under favorable circumstances can its potential be activated (Chalmers et al., 2019).

Von Briel et al. (2017) presented compression and conservation (resource-preservation), expansion and substitution (resource-modification), and combination and generation (resource-creation), as enabling mechanisms for new venture creation. Davidsson et al. (2020) extended on these mechanisms by introducing uncertainty reduction and legitimation (psychosocial enablers), connecting demand to expansion and substitution mechanisms, and highlighting enclosing as a market enhancement mechanism. Furthermore, enabling mechanisms may increase the supply or demand of an offering, or enhance the overall corporate value (Kimjeon & Davidsson, 2021).

Importantly, different EEs can provide similar mechanisms (Davidsson et al., 2020). For instance, both technological developments and large-scale manufacturing enable conservation mechanisms by reducing the resource intensity (Von Briel et al., 2017), but so does climate change by reducing the need for cooling, heating, or irrigation systems (Davidsson et al., 2020). Likewise, different EEs may conjoin to create complementary mechanisms beneficial to entrepreneurial initiatives (Chen et al., 2020). Moreover, mechanisms can extend beyond its primary effects, and produce secondary effects by interacting with other mechanisms (Davidsson et al., 2020).

Davidsson et al. (2020) identified opacity and agency-intensity as characteristics of mechanisms. Opacity is the degree of difficulty in identifying a mechanism; agency-intensity is the complexity of resources required to activate a potential mechanism (Davidsson et al., 2020; Davidsson et al., 2021; Kimjeon & Davidsson, 2021). An opaque and agency-intense mechanism hinders entrepreneurial action (Wood et al., 2022). Moreover, EEs affect the ability to evaluate venture creation opportunities (McGee & Terry, 2022). In other words, enabling mechanisms exist independent of the actor, but the ability to perceive their obviousness and intensity is dependent on entrepreneurial profiles.

Notably, the quality of an entrepreneurial opportunity depends on how accurately an entrepreneur perceives said opportunity, and their ability to realize their vision (Wood et al., 2022). Meaning, when a mechanism is low in opacity and intensity, entrepreneurs should be able to identify how to access an opportunity, and whether the needed resource investment is worthwhile. For individuals, McGee and Terry (2022) identified entrepreneurial self-efficacy and orientation as enablers in recognizing potential opportunities. Thus, an entrepreneur's inherent qualities influence the degree to which the opacity of a mechanism influences the venture.

Networks also play an enabling role. Sine and Lee (2009) argue that diverse networks help entrepreneurial agents be more aware of opportunities and resource requirements, while Chalmers et al. (2019) identified cooperation as a method to decrease the opacity and intensity of digital technologies through the diffusion of knowledge ecosystems. Thus, cooperative networks that disseminate core information and resources could lead to more accurate evaluations of enabling mechanisms and enable entrepreneurial agents to initiate, develop, and succeed with, new venture creation.

Opacity and agency-intensity can rely on formal institutions, given that they influence entrepreneurial behaviors and initiatives (Welter & Smallbone, 2010). In other words, for entrepreneurs to realize mechanisms, they will be subject to the clarity and connectivity of institutional structures and its interactions with potential entrepreneurs. This is particularly apparent in social entrepreneurship, as it is a complex phenomenon built on the interactive nature between institutions and agents (Hu et al., 2019). Thus, the way institutional organizations support social entrepreneurs will affect their ability in accurately perceiving mechanisms.

As such, socio-demographic stakeholders can play a key role in presenting social entrepreneurs with mechanisms. Social entrepreneurs and their surrounding context are subject to multilevel influences that determine entrepreneurial action or inaction (Hu et al., 2019). Sine and Lee (2009) note that social movement organizations must mobilize resources for entrepreneurs to realize institutional issues; they should also frame sustainable solutions as realistic and approachable. Given the presented connection between structure and agency, entrepreneurs concerned with sustainable issues should be aware of the network dynamics that influence their unactualized venture idea.

2.1.3. Roles

Roles describe the influences of EE mechanisms at different stages of the venture development process (Davidsson et al., 2020). Potential entrepreneurs assess external enablers as dynamic and continuously allocate resources to understand the nature of enablers and their disruption of existing market equilibria (Chalmers et al., 2019). Thus, depending on the stage of the new venture, entrepreneurs may find enabling mechanisms to serve in one of three roles. Firstly, external enablers can trigger the creation of new ventures. Secondly, they can shape resources to stimulate positive changes to the product,

market, or venture-level offerings. Lastly, sometimes these mechanisms have an undetected effect that enhances the overall outcome of ventures. (Davidsson et al., 2020).

Although Davidsson et al. (2020) initially introduced the idea of roles, the roots of enabling roles trace back to Malone et al. (1999), who identified creation, modification, and preservation as entrepreneurial activities. Notably, von Briel et al. (2017) suggested that digital technologies could enable mechanisms in three distinct stages of venture creation: prospecting, developing, and exploiting. Chalmers et al. (2020) explored this matter further and identified that many entrepreneurial ventures fail due to insufficient capabilities to act on new venture ideas. In reference to this study, Kimjeon and Davidsson (2021) commented that artificial intelligence can trigger venture creation through various mechanisms, of which some are more opaque than others. Thus, taken together, these three studies stress that the potential to unravel enabling mechanisms relies on internal capabilities to manage resources and accurately portray the opportunity.

Ecosystems can also enrich the potential of entrepreneurial roles. Chalmers et al. (2019) identified that open, peer-supported, digital ecosystems could reduce the magnitude of a mechanism's opacity and agency-intensity. Thus, digital technologies posit enabling roles by reducing barriers to entry and agency-intensity for everyone. More formally, China's institutional environment enables social entrepreneurial responses to actualise entrepreneurial initiatives (Hu et al., 2019). Similarly, environmental regulations enable incentives to implement existing technologies across various facets of the institutional landscape (Hunt & Fund, 2016). In reference to these studies, Kimjeon & Davidsson (2021) comment that institutional changes shape demand- and supply-mechanisms for social and environmental ventures.

Given that there is limited research on how EEs influence different cohorts of entrepreneurs (Manochoa et al., 2021), we suggest that certain groups of entrepreneurs may be more vulnerable to specific institutional enablers than traditional entrepreneurs. Thus, a deeper exploration on which enablers trigger, shape or enhance the outcome of non-traditional entrepreneurial ventures would be a fruitful avenue for research.

2.2. Sustainable Entrepreneurship

2.2.1 Classifications of Sustainable Entrepreneurship

Sustainable entrepreneurship is a subfield of entrepreneurship that has received increased attention over the past decade (Muñoz & Cohen, 2017; Stubbs, 2017; Belz & Binder,

2015). Sustainable entrepreneurship originates in sustainable development, which was first defined as the ability to meet “the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations, 1987, p.16). Since then, many more initiatives have progressed sustainable development (e.g., United Nations, 1992; United Nations, 1998; UNFCCC, 2015; United Nations, 2015). Consequently, sustainability entrepreneurship – unlike a traditional emphasis on economic success and development – aims to meet, balance, and integrate economic, social and ecological goals (Belz & Binder, 2015).

Three themes guide sustainable entrepreneurship (Anderson, 1998; Hockerts & Wüstenhagen 2010; Kuckertz & Wagner, 2010; Schaltegger & Wagner, 2011; Shepherd & Patzelt, 2011; Young & Tilley, 2006):

1. Sustainable entrepreneurship can result from the recognition of sustainability challenges with high-potential economic utility.
2. Sustainable entrepreneurship is the strategic pursuit of uniting social, economic and environmental entrepreneurial goals.
3. Sustainable entrepreneurship preserves the present and/or future welfare of society.

However, as sustainable entrepreneurship remains open-ended, it is important to acknowledge the plethora of different definitions that fall under sustainable entrepreneurship research. Furthermore, there are several concepts closely related to sustainable entrepreneurship that deserve attention.

Social entrepreneurship is an entrepreneurial process that aims to meet social needs through the innovation and combination of resources (Mair & Marti, 2006). Therefore, it is often exemplified by socially oriented for-profit organizations, non-profit organizations, or hybrid organizations (Choi & Majumdar, 2014). Social entrepreneurs uniquely shift operational functions to alternative organizational forms and away from traditional commercial enterprises (Thompson et al., 2011). Equally important in social entrepreneurship is the altruistic motivation: individuals tend to prioritize social motives over self-interest or financial interest, and instead solve challenges to help others (Thompson et al., 2011).

Environmental entrepreneurship realizes opportunities that address environmental market failures by creating both environmental and economic value (Dean & McMullen, 2007;

Lenox & York, 2012; Thompson et al., 2011). Conservation of the environment and regeneration of nature are therefore essential elements of environmental entrepreneurship. Furthermore, it uniquely combines economic and environmental objectives. Thus, environmental entrepreneurship differs from its social counterpart by adopting eco-centric approaches to profit (Schaefer et al, 2015). However, it is distinguishable from traditional entrepreneurship in that it focuses on solving environmental problems through product or service innovation (Thompson et al., 2011).

Sustainable entrepreneurship focuses on discovering and exploiting opportunities that simultaneously address environmental, social and economic market failures (Parrish, 2010; Schaefer et al.2015; Thompson et al., 2011). Therefore, it aims to fulfil both social and environmental goals while creating economic value similar to traditional entrepreneurship (Schaefer et al. 2015, Thompson et al, 2011). The integration of the triple bottom line under one venture distinguishes sustainable entrepreneurship from its social and environmental contemporaries, both of which pursue a double bottom line (Belz & Binder, 2015). Since there are similarities and differences in all three streams of entrepreneurship – be it the focus on the triple bottom line or double bottom line, the organizational form, or the motivation behind it – it is not possible to isolate the terms. However, by defining and characterizing all three streams, it becomes clear that sustainable entrepreneurship most closely applies all pillars of sustainable development.

2.2.2. The Role of Sustainable Entrepreneurship in Society

Entrepreneurial opportunities should be designed to conserve nature, livelihoods, and communities (Shepherd & Patzelt, 2011). If this argument is accepted, entrepreneurship not only echoes the three pillars of sustainable development, but also favors individual, economic, and societal development. Anderson (1998) has a similar notion of preservation, but elaborates that that a unique combination of social, economic, and environmental values contributes to this manner. Concurrently, Young and Tilley (2006) argue that the intersection of economic, social, and environmental sustainability influences the structural definition of entrepreneurial initiatives. That is, entrepreneurs design their ventures around sustainability, further confirming Shepherd and Patzelt's (2011) prospective outlook on entrepreneurial opportunities. Comparatively, the perception of sustainable values as a strategic tool seems to drive the design and realization of entrepreneurial initiatives.

Notably, without quality institutional support, entrepreneurship can be inefficient, destructive, and a hindrance to economic development (Bylund & McCaffrey, 2017). Within this regard, Hinderer & Kuckertz (2022) suggest that sustainable entrepreneurship is institutionally based and incorporates entrepreneurial activity through the design and transformation of appropriate innovation policies. Similarly, Schaltegger and Wagner (2011) note that sustainable entrepreneurs are innovative and market-oriented agents that target societal value, but also individuals that are part of a larger society bound by institutional principles. In other words, the sustainable entrepreneur is an agent of creation, but is simultaneously constricted by institutional limits. As a result, sustainable entrepreneurship is dependent on strong institutions that not only support entrepreneurial development, but also encourage sustainable development principles as formal pillars.

Interestingly, one could also argue that institutional development is dependent on sustainable entrepreneurship. The identification and realization of market disequilibria can provide economic opportunities that transform a particular sector towards more environmental and social inclusion (Hockerts & Wüstenhagen, 2010). Moreover, entrepreneurial opportunities are not exclusive to market imbalances and can also be generated from institutional gaps, but entrepreneurs differ in their ability to identify and exploit both these opportunities (Welter & Smallbone, 2010). Given that unresolved problems call into question the established institutional frameworks (Sine & Lee, 2009), one could perceive sustainable entrepreneurs as the solution to market and institutional holes, thus challenging earlier descriptions of agent-institution relationships.

Sustainable entrepreneurs may also best integrate into weaker institutions. That is, they can identify and unite a vast range of institutional issues (Thompson et al, 2011), rather than be restricted to solely social or environmental concerns. However, entrepreneurship can stifle economic development without institutional support (Bylund & McCaffrey, 2017). Sustainable entrepreneurs rely on institutions that enable entrepreneurial activity through policy designs (Hinderer & Kuckertz, 2022). With that said, if one accepts the argument that entrepreneurial opportunities can be generated from market disequilibria (Hockerts & Wüstenhagen, 2010), or institutional holes (Welter & Smallbone, 2010), then the potential of sustainable entrepreneurship as an institutional solution returns. Thus, the high potential of sustainable entrepreneurship is an extensive field of research to explore.

2.3 Entrepreneurial Ecosystems

2.3.1. Attributes of Entrepreneurial Ecosystems

Entrepreneurial development is widely recognized as a catalyst for economic growth (Cavallo et al., 2018). However, entrepreneurs do not exist in a vacuum. Rather, they are actors within a larger system. Active participation from various stakeholders, through the facilitation of human, financial, and organizational resources, can create an overlap between goals and determine the success of entrepreneurial ecosystems (Simatupang et al., 2015). Such an ecosystem relies on the interaction between individuals, organizations, and institutions (Alvedalen & Boschma, 2017). These interactions allude to the notion that entrepreneurial activities are restricted by socio-economic activities (Cavallo et al., 2018), but also that humans are unique actors with complex intentions and influences (Isenberg, 2016). Thus, it is critical to consider entrepreneurial ecosystems as dynamic and socially constructed within specific regions and locations (Malecki, 2018). With that in mind, entrepreneurial activity may either be facilitated or restricted by its closely associated relations.

Entrepreneurial ecosystems are characterized by a set of interconnected entrepreneurial actors, organizations, institutions, and processes that merge to facilitate productive entrepreneurial activities within a local environment (Mason & Brown, 2014; Stam, 2015). Finance, culture, human capital, markets, policy, and support systems are predominant determinants of entrepreneurial production (Isenberg, 2010; 2011; 2016). Similarly, Spigel (2017) elaborates that the presence of an entrepreneurial business environment, favorable institutional structures, and a risk-oriented entrepreneurial culture should be in place. While qualities of entrepreneurial ecosystems remain discussable, the consensus is that the interaction between contextual, structural, and relational elements influences entrepreneurial outcomes (Theodoraki et al., 2022)

The structure of entrepreneurial ecosystems is also subject to argument. While some argue that entrepreneurial ecosystems are decentralized with multiple intentions and parameters of satisfaction (Isenberg, 2016), others see government stimulation as the vital driver of entrepreneurial ecosystems (Cohen, 2005). Moreover, entrepreneurial ecosystems can be created through any number of actions (Stam & Van de Ven, 2019), and can facilitate entrepreneurial activity overall but cannot guide individual sentiments of entrepreneurship (Wurth et al., 2022). Generally, entrepreneurial systems are

constantly in fluctuation to best stimulate productive entrepreneurial production (Malecki, 2018; Stam & Van de Ven, 2019). Therefore, it is key to understand the interrelations between multiple actors holistically and see how they influence the evolution of entrepreneurial ecosystems.

Most expressive in entrepreneurial ecosystems is the interdependence of multiple actors. A weakness of one actor can have a profound impact on the entire system (Cohen, 2005). This is logical, as stakeholder involvement is dependent on the convenience of business-specific conditions such as location, regulations, organizational culture, and industry (Bischoff & Volkmann, 2018). If in place, reactionary elements can bring forth shared cultural beliefs that ease the entry to entrepreneurial productivity (Malecki, 2018). This is often exemplified through knowledge sharing (Mason & Brown, 2014; Spigel, 2017), collaborative competencies (Theodoraki et al., 2017), and connective approach to support (Wurth et al., 2022).

Since entrepreneurship develops from the infrastructural development through multiple stakeholders (Stam & Van de Ven, 2019), the institution will play a major role. Given the complexity of the entrepreneurial systems in which entrepreneurs operate, it is essential that these systems exhibit self-sufficiency and self-regulation, as entrepreneurs hold immediate influence over them (Isenberg, 2016). Therefore, investigating the elements that impact entrepreneurial ecosystems, as demonstrated by Alvedalen and Boschma (2017), can enhance the productivity of an entrepreneurial region and shed light on the contextual factors at play.

The notion of entrepreneurial ecosystems should investigate the social context that affects entrepreneurial outcomes (Bischoff & Volkmann, 2018). Generally, entrepreneurial ecosystems are geographically bound to include a select group of interdependent factors (Alvedalen & Boschma, 2017; Pankov et al., 2019). In fact, the availability of financial and human resources is a core reason for geographic concentration of entrepreneurship, inadvertently leading to ecosystem development (Isenberg, 2016). At such a level, formal institutions drive the interdependence of entrepreneurial actors and create the systems to which entrepreneurs are bound by (Stam & Van de Ven, 2019).

Since entrepreneurial ecosystems can emerge for various reasons (Stam & Van de Ven, 2019), entrepreneurs have a long-term commitment to the development of local ecosystems (Stam, 2015). Fertility for entrepreneurial ecosystems is often led by

organizations that are local, and locations that have established regional knowledge systems (Mason & Brown, 2014). Therefore, entrepreneurial ecosystems are attentive to local contexts and the institutions that foster their potential. Thus, it is essential to consider local problems that require solutions, as they may be the seed that sprouts to form an entrepreneurial ecosystem.

2.3.2. Sustainable Entrepreneurial Ecosystems

Entrepreneurs rely on the interconnectivity of the ecosystems, and sustainable entrepreneurs are no different. The entrepreneurial environment in which sustainable entrepreneurs reside can either facilitate or inhibit them from realizing their ventures (Bischoff & Volkmann, 2018). Moreover, contextual factors have significant effects on sustainable entrepreneurs' intentions (Pankov et al., 2019). Given that entrepreneurs can instigate large-scale structural transitions towards sustainability (Uddin et al., 2015), the role of sustainable entrepreneurship in interdependent systems becomes ever so important. This paradigm shift towards sustainability has led to a contemporary redefinition of productive entrepreneurship, which should include social and ecological value creation as productive to society's welfare (Wurth et al., 2022). If sustainable entrepreneurs and conventional entrepreneurs are truly different, then so will the formation of their ecosystems. However, the context of sustainable entrepreneurial ecosystems and their influence on sustainable entrepreneurs has been given insufficient attention (Pankov et al., 2019).

This becomes especially prevalent when considering the complexity of sustainability. Social or environmental solutions often emerge from the involvement of many different stakeholders and an open culture that supports sustainability is essential to the development and implementation of social innovations (Audretsch et al., 2021). The qualities of entrepreneurial ecosystems may therefore be inapplicable to sustainable ecosystems, the same way that the definition of productive entrepreneurship is inapplicable. Despite entrepreneurship being key in mitigating GCs, the profit orientation associated with entrepreneurship may be unbecoming to address those challenges. (Audretsch et al., 2021). Therefore, sustainable entrepreneurial ecosystems are interconnected groups of entrepreneurial actors, organizations, and institutions in a local community. However, their distinct focus is on sustainable development, achieved

through job creation, economic growth, and the improvement of environmental and social conditions (Cohen, 2005).

There are certain similarities between entrepreneurial ecosystems and sustainable entrepreneurial ecosystems. The degree of interaction between actors, organizations, and institutions influences the connectivity of both sustainable and conventional business models (Neumeier & Santos, 2018). Moreover, the local culture is an essential dimension within the formation of entrepreneurial ecosystems, and becomes even more critical in sustainable ecosystems (Cohen, 2005). Similarly, entrepreneurial ecosystems have been investigated as vital support system for entrepreneurial productivity but become even more essential within sustainable entrepreneurship (Volkman et al., 2019). It is therefore key that sustainability is a visible discourse in the formation of an ecosystem.

However, there are degrees of difference between conventional and sustainable entrepreneurial ecosystems. Conventional entrepreneurial ecosystems mainly focus on economic productivity, while sustainable entrepreneurial ecosystems encompass all three pillars of sustainability (Bischoff & Volkman, 2017; Pankov et al., 2018). Specifically, having a system of multiple stakeholders that participates in sustainability during all phases of a venture is crucial to overcome societal challenges (Audretsch et al., 2021).

To prioritize sustainability as a core driver, ecosystems can be designed with sustainable actors at the center and their efforts mainstreamed throughout the entire system (Fichter et al., 2016). This could also lead to an interdependent design that benefits both conventional and sustainable entrepreneurs, where conventional entrepreneurs would consider social challenges while sustainable entrepreneurs could utilize conventional technologies (Audretsch et al., 2021). Thus, sustainable entrepreneurial ecosystems have the potential to reduce the boundaries between conventional and sustainable systems and provide a more comprehensive solution to complicated challenges that an ecosystem face.

2.4 Area of Research

2.4.1. Research Gaps

In our assessment of the literature, we identified several areas of research that require more attention. By combining the gaps in sustainable entrepreneurship, the EE framework, and entrepreneurial ecosystems, there is potential to develop a study that

uncovers unanticipated findings, connecting these streams of literature and providing value to each topic separately.

Foremost, the EE Framework and its elements have been considered as action-centricity rather than agent-centricity (von Briel et al., 2017). Given that agent-centric evaluations of the EE could affect an entrepreneur's decision to realize a venture (Davidsson, 2015), the potential enablement of entrepreneurial activities could vary drastically depending on the agent-perspective and context. Research into agent-centricity may allow for a better understanding of personal and context characteristics that influence entrepreneurial perception and action.

Moreover, Davidsson et al. (2020) consider their approach incorporative of systematic attention, but little effort has been made in research to realize this. To understand how entrepreneurs respond to EEs, there is a need to assess their ecosystems and see which dimensions may influence their perception and action. However, holistic approaches are few in entrepreneurial ecosystem studies, which has limited the potential to uncover the interrelated elements of entrepreneurial production (Alvedalen & Boschma, 2017; Bischoff & Volkmann, 2018). There is therefore potential to study both EEs and entrepreneurial ecosystems from an agent perspective and identify contextual boundaries that facilitate entrepreneurship. This could provide key insights into the various layers, and their interrelations, that encompass the entrepreneurial ecosystem.

While both the EE Framework and entrepreneurial ecosystem literature have undergone extensive research into conventional entrepreneurship, sustainable entrepreneurship remains under researched. Specifically, EE literature has highlighted that more research is required related to how they influence different cohorts of entrepreneurs (Manochoa et al., 2021), while few scholars attend to sustainability-related dimensions within entrepreneurial ecosystems (Bischoff & Volkmann, 2018; Neumeyer & Santos, 2018; Volkmann et al., 2019). Therefore, researchers should consider the structure-agency relationship as a foundation for studying how individuals in sustainable entrepreneurial ecosystems perceive external enablers, and how this influences the decision to act on entrepreneurial activities. This could highlight the utilization and circumvention of systems in various sustainable entrepreneurial activities.

Empirically, the EE Framework has been applied to global challenges (Davidsson et al., 2021), compared enablement across various countries (Schade & Schuhmacher, 2022), or focused on the U.S (Bennett, 2019a; 2019b), China (Chen et al., 2020; Yang et

al., 2019), or Europe (Hinderer & Kuckertz, 2022). While these studies provide fruitful advances in understanding contextual factors in geographic areas, they have been predominantly understood through an Anglo-American-European lens. Further, entrepreneurial ecosystems require context-specific investigations, of which limited research has been conducted (Cavallo et al., 2018; Stam & Van de Ven, 2019; Volkmann et al., 2019; Wurth et al., 2022).

Given the need to understand Grand Challenges in developing countries (Jamali et al., 2021), we propose that further research should explore how sustainable entrepreneurial ecosystems facilitate entrepreneurial responses to address these challenges. This could lead to unique applications for sustainable entrepreneurs that pursue solutions for complex challenges.

2.4.2. Research Purpose

In line with the identified shortcomings in research, the drive of this thesis study is to identify how GCs facilitate sustainable entrepreneurship in SSA, given the interaction between entrepreneurs, their ecosystems, and climate change-associated GCs. There is a general need for more empirical research on the EE Framework, sustainable entrepreneurship, and sustainable entrepreneurial ecosystems. We aim to combine these three principles to better understand the response entrepreneurial agents may exemplify during the venture creation process. Moreover, this would allow us to create, develop and streamline Davidsson et al.'s (2020) EE Framework in the context of sustainable entrepreneurship in SSA.

By identifying and applying sustainable development to GCs in the Sub-Saharan context, we extend on the idea that external enablers may partially enable certain entrepreneurial agents (Davidsson et al., 2020). This could offer findings that prospective and current entrepreneurial, as well as policymakers, may apply in the Sub-Saharan context to include a larger portion of the population in addressing GCs.

Overall, we aim to uncover how GCs, entrepreneurial agents, and their ecosystems foster entrepreneurial activities. By doing so, we can lay the foundation for researchers and practitioners to apply our findings to develop entrepreneurial systems that consider sustainability in SSA, as well as transfer our findings to different regional contexts or with different cohorts of entrepreneurs.

To fill the identified research gaps and closely follow our research intentions, we choose to lead this study with one research question. This can contribute to new ecosystems and venture-level knowledge. In the Sub-Saharan context, we can investigate interdependent dimensions and identify the interplay between sustainable entrepreneurs and GCs. Thus, we ask:

How do sustainable entrepreneurs interact with their ecosystems, to enable venture activities that target grand challenges in Sub-Saharan Africa?

The investigation of this question makes the potential relationship between sustainable development, entrepreneurial ecosystems, and the emergence of GCs possible. It would also illustrate the high potential of sustainable ecosystems in SSA. These findings could be useful in identifying the initial triggers for new venture creation in the given context. We can also compare already established findings in each respective theory by providing empirical insights and reverting back to what is already known.

3. Empirical Context and Method

The contents of this chapter introduce our empirical context of Sub-Saharan Africa, which is uniquely characterized by its many grand challenges and entrepreneurial opportunities. Following, we explain how critical realism aligns with the exploration of entrepreneurial enablement in Sub-Saharan Africa. Next, we introduce how we aim to conduct our study through the research design, sampling strategy, and data collection. An interview-based qualitative design was best suited to gather intimate insights on the Sub-Saharan context. We then outline how combining thematic analysis with theory-building fits our approach to make empirical and theoretical contributions. Finally, the ethical considerations highlight the steps to ensure the quality of this research study.

3.1. Empirical Context

The empirical context of this study is found in Sub-Saharan Africa. 46 countries make up SSA, with an estimated total population of 1.18 billion (Statista, 2021). The African continent has the youngest population in the world, with a median age of 19 (Statista, 2023). In contrast, the median age of the global population is 30 years old (Ritchie & Roser, 2019).

SSA is a region characterized by the high potential of a young population, entrepreneurial ingenuity, and a great wealth of natural resources (European Commission, 2023). SSA's distinctive environment presents both opportunities and challenges, as it faces unparalleled vulnerability to climate change, food insecurity, poverty, and natural disasters compared to other regions (Institute for Economics and Peace, 2022).

Poverty remains at high levels in Africa, and the COVID-19 pandemic has pushed an additional 23.6 million people into extreme poverty (UNDP, 2022). Projections indicate that 492 million people or 30.5% of Africa's population will be living under the global poverty line of \$1.90 a day by 2030 (UNDP, 2022). A comparison between North Africa and the rest of Africa reveals a difference in poverty, as the rate of extreme poverty is much lower in North Africa, with 1.5% of the population expected to live in extreme poverty in 2030 (UNDP, 2022). Thus, within SSA, rates of poverty are disproportionate to the rest of the continent.

Future challenges may include the potential consequences of climate volatility events. The impacts of climate change will not only cause enormous environmental degradation but will directly impact the Sub-Saharan population, as 86 million individuals are expected to migrate due to climate change; this would result in more than a third of

all global climate migrants being Sub-Saharan residents forced to move within or out of their country (Viviane et al., 2021).

Despite the presence of GCs, there is a tremendous potential for economic development. Sub-Saharan entrepreneurs are positioned to grow and solve many of Africa's unmet needs (Leke & Signé, 2019). The environment for economic development is becoming increasingly favorable for entrepreneurs, as African industries stand to double their production in the coming decade (Leke & Signé, 2019). Moreover, Africa has a young population that is increasingly urban and prosperous (Signé, 2018b). Africa also has an abundance of natural resources (Signé, 2018a), of which there is a huge economic opportunity to transition to sustainable energy in the Sub-Saharan region (The World Bank, 2023). Investments in green energy can also alleviate social and economic challenges (The World Bank, 2023). Overall, SSA is projected to become one of the world's most dynamic and important global markets (Selassie & Fuje, 2021).

Concluding, the Sub-Saharan region offers a multifaceted and rich research context, characterized by a unique institutional environment that presents challenges and opportunities for sustainable development: The region's pressing problems, such as vulnerability to climate change and extreme poverty, create a compelling need for sustainable action. Simultaneously, the region offers opportunities for sustainable entrepreneurs to address these challenges and contribute to social engagement, environmental protection, and economic growth with the overarching goal of solving GCs in the region.

3.2. Research Paradigm

A research paradigm is a system of core beliefs that researchers apply to explain the nature of the world, the individual's role in it, and the plausible relationships to the world and its principles (Guba & Lincoln, 1994). By choosing a research paradigm, we can approach our research study with a degree of congruence and philosophical validity. A research paradigm covers four core elements: ontology, epistemology, axiology, and methodology (Lincoln & Guba, 1985). For this study, we adopted the critical realism paradigm and hold ourselves to its rudimentary principles.

Critical Realism is a philosophical stance that offers an alternative approach to positivist and interpretivist paradigms, by leveraging both paradigms to develop knowledge (Wynn & Williams, 2012). Specifically, Critical Realism provides an

extensive interpretation on philosophical approaches by highlighting that the ontological differences between the natural reality and social reality are cause of the epistemological difference between natural and social knowledge (Gorski, 2013). In fact, the foundation of Critical Realism responds to the “epistemic fallacy”, the mistaken perspective that ontological questions can always be rearranged to fit epistemological classifications (Bhaskar, 2008, p.5). In the upcoming subsections, we will demonstrate why Critical Realism is a suitable framework for our study, considering the specific characteristics and requirements of our context.

3.2.1 Research Ontology

Ontology is the philosophical assumption on the nature of reality and its existence (Easterby-Smith et al., 2015). Critical Realism claims that ontology may collapse into epistemology by reducing reality to our observed knowledge of it (Bhaskar, 1998; Bhaskar, 2008). In simpler terms, knowledge about the real is often mistaken for the reality itself. This fallacy is core to the ontological basis of Critical Realism, which is reflective of the independent reality that allows scientific discovery to be possible (Bhaskar, 2008).

Ontologically, Critical Realism explains reality as stratified into three domains: the real, the actual, and the empirical (Bhaskar, 1998). The real domain consists of the structures and mechanisms that subsist and function independently of our knowledge, experience, or social conditions. The actual domain consists of perceived, unperceived, or unperceivable events that the real enables or constraints. Finally, the empirical domain consists of all events that are observable (Bhaskar, 2008). In other words, the real are the causal forces that produce events, which exist in the actual domain regardless of whether they are perceived, while those that are perceived become part of the empirical domain (Fletcher, 2016). From a critical realist perspective, the categorization of entrepreneurial enablement, GCs, and climate change can be understood as pertaining to one of the three ontological domains of Critical Realism.

First, the real domain is typified by the phenomena of climate change. Climate change is an independent phenomenon that exists regardless of human perception or activity, its causal mechanisms being the natural forces that cause climate fluctuations (IPCC, 2021). While human activity is the predominant contributor to the acceleration of climate change (Lynas et al., 2021), the phenomenon itself extends beyond human action

and involves complex interactions between various natural systems (IPCC, 2021). Thus, climate change would subsist without human activity, albeit to a drastically lesser extent. This allows climate change to be seen as the structure of a hidden reality.

Given that climate change is a direct influencer of socioeconomic variables (Matsumoto, 2019), we suggest that the real domain generates challenging events that jeopardize the sustainability of human society. Thus, GCs constitute the actual domain. They are not exclusively the result of natural phenomena but reflect complex societal factors. That is, GCs are events that require coordinated efforts from various stakeholders to address important societal problems (Howard-Grenville et al., 2017). Therefore, GCs enable economic activity, regardless of whether agents perceive this or not. This further stabilizes the nature of GCs as an ‘actual domain’.

Lastly, agents that respond to GCs with entrepreneurial creation form the empirical domain. Davidsson et al. (2020) state that only some entrepreneurial agents may realize economic activity because of external events. In our context, entrepreneurial venture creation is an observable response of how knowledge, skills, and resources interact to address the challenges set by the real and actual domain. The observation of these responses can help explain the relationship between social structures and human agency, a core argument for the application of Critical Realism (Bhaskar, 2011). Consequently, responses may highlight the effect they can have on underlying realities and clarify matters related to GCs and beyond.

3.2.2. Research Epistemology

Epistemology assumes the nature of knowledge and its accessibility (Easterby-Smith et al., 2015). Critical Realism approaches knowledge through epistemic relativism. This assumes that all knowledge is imperfect, incomplete, and irregular over time (Albert et al., 2020). In this regard, it holds that all beliefs of knowledge are socially produced and cannot exist outside of historical contexts, although some beliefs are more rational (Bhaskar, 2011). In simpler terms, our knowledge on reality is faulty, but some knowledge claims are closer to discovering reality than others. Judgmental rationalism exemplifies this by advocating for the inclusion of criteria that determined which accounts of reality are valid (Albert et al., 2020).

The epistemological objective of Critical Realism is therefore to describe the observed relationships between the empirical, actual, and real world. Experiences and

events are investigated to understand the causal mechanisms that explain how the world works (Lawani, 2020). In our context, we explore entrepreneurial responses to explain how GCs stemming from climate change enable sustainable entrepreneurship. Thus, we investigate experiences, events, and mechanisms to understand the three realities and their relationships.

Further, the volatile and actionable nature of our phenomena means that the knowledge on them is subject to change. In line with epistemic relativism, we therefore consider our research as inherently incomplete and imperfectly representative of past and future contexts. However, we also align with judgmental rationalism and, by doing so, we expect our contribution to be the most rational explanation of the relationships between sustainable entrepreneurs, GCs, and climate change.

3.2.3. Research Axiology

Axiology is the study of value and ethics. It encompasses all implicit and explicit perspectives that shifts a researcher to certain assumptions, social and individual norms, and theories (Lincoln & Guba, 1985). In other words, it refers to the choices a researcher makes on including their own values and beliefs as worthwhile (Saunders et al., 2019). Axiology is key to research paradigms, especially having the axiological skill to articulate the values and judgments that drive the study (Heron, 1996).

In Critical Realism, research is seen a value-laden; the researchers themselves have a degree of bias through personal worldviews and cultural backgrounds that cannot be removed but try to minimize these dispositions by being as objective as possible (Saunders et al., 2019). By studying the Sub-Saharan context, we adopt this axiological position for two important reasons. Firstly, as two researchers from Western Europe, we have vastly different upbringings than our participants from SSA. This is especially important to acknowledge, as our own worldviews may influence our interpretations of our participants' experiences.

Secondly, we are only able to understand our studied phenomena and possible entrepreneurial responses conceptually. As we are neither experienced entrepreneurs, nor live in an area where climate change generates profound social and environmental detriments, we rely on our academic background to conduct this study. Therefore, our findings are reflective of our academic focus and may bundle experiences of multiple participants as generalizations.

To uphold objectivity and mitigate our personal biases, we considered eleven ethical principles to define the researcher-participant relationship (Bell & Bryman, 2007), and four dimensions that determine the trustworthiness of the study (Guba, 1981). These are elaborated on in §3.7 Ethical Considerations.

3.2.4. Research Methodology

In line with the research purpose of this study – to identify the relationships between entrepreneurial responses, GCs, and climate change – we followed an exploratory approach. The exploratory approach in social sciences aims to optimize the potential to discover generalizations that can describe and enhance the understanding of social or psycho-social field of research (Stebbins, 2001). Exploratory approaches are often used to explain the appearance of certain phenomena and dismiss current misconceptions to refine the area for future research (Babbie, 2020). Moreover, exploratory research is most appropriate for when little to no scientific knowledge is available for the phenomena under examination, but researchers have reason to believe that the phenomena is worth discovering (Stebbins, 2001).

Trying to understand the implications of sustainable entrepreneurial ecosystems, we were subject to various social dynamics that may influence our results. Therefore, we were best suited to interpret our results and explore generalizations on the emergence of GCs and refine how such appearances may impact the development of sustainable entrepreneurial ecosystems. Furthermore, Critical Realism often investigates open systems where hypothetical testing is unmanageable (Bhaskar, 1998), and we believe that, by researching Sub-Saharan ecosystems, we explored open systems where various inputs and outputs may emerge.

As we refrain from arguing that our findings are absolute, we argue that exploratory research best captured our research epistemology. All knowledge and our access to it is inherently incomplete, although some knowledge may be more rational (Bhaskar, 2011). Expectedly, existing theories may not be accurate to reality, but some theories are assumingly more correct. The use of such theories facilitates a deeper analysis to corroborate, expand, or deny that theory, which revises the principles of reality altogether (Fletcher, 2016). Since our findings provided a rational description of our phenomena, we aligned with exploratory research.

Given that the investigation of ecosystems and GCs is best conveyed through the experiences of entrepreneurs, we adopted a qualitative approach. By gathering data in non-numerical form, we can obtain and interpret data on motivations and personal experiences in a more holistic and context-driven way (Easterby-Smith et al., 2021). This helped us uncover patterns and relationships without reducing entrepreneurial experiences to statistical groupings. The intimate insights that qualitative research brings removed a degree of our axiological biases and enhanced our understanding of the Sub-Saharan context.

Explorations of phenomena through theory is typically iterative and seeks to use empirical resources to explain the previously undiscovered mechanisms of the phenomena; it aims to identify new patterns and test those as a plausible explanation (Bhaskar, 2009). Therefore, we considered abductive reasoning to be the most formative, as our focus laid with reasonable explorations of observed phenomena (Sober, 2005, p. 24-26) and theory development (Dubois & Gadde, 2002). This closely aligned with Critical Realism, whose context of discovery is abduction (Decoteau, 2016).

3.3. Research Design

Our study merged the theoretical development of the EE Framework with the investigation of sustainable entrepreneurial ecosystems. Therefore, we perceived Eisenhardt's theory-building approach as the most suitable research design. The Eisenhardt method is unique in the sense that it emphasizes the emergence of theoretical constructs from evidence, while gathering data incrementally (Eisenhardt, 1989). Our approach utilized the Eisenhardt method to link emergent theoretical constructs to extant literature on the EE Framework and sustainable entrepreneurship theory, which enhanced the validity, generalizability, and theoretics of our theory-building (Eisenhardt, 1989).

In a multidisciplinary, highly complex, institutional phenomenon, we believe that its unique nature warranted an interview-based study. That is, we saw an intimate exploration of experiences to be appropriate in exploring relationships between sustainable entrepreneurs and GCs. Within Critical Realism, this alludes to an intensive design, which seeks to generate constructs to explain phenomena (Edwards et al., 2014). In reference to Eisenhardt (1989), an interview-based study is logical, as researchers should be intimately familiar with each case as a stand-alone entity. By considering the context and personal reality of each research participant, it is rational to adopt an

interview-based study to explain the catalysts for sustainable entrepreneurship. Eisenhardt et al. (2016) further supported our context by identifying that extreme cases in unique situations are particularly relevant for research on GCs.

Similarly, we identified ecosystem interactions as a result of GCs to explore complex challenges associated with the phenomenon and measure how entrepreneurs understood and acted on the phenomenon (Eisenhardt et al., 2016). This enhanced our exploratory approach and further highlighted the appropriateness of intimate interview-based theory-building. As we explored dynamics between the entrepreneur and the occurrence of the phenomenon, our choice of qualitative data was best suited (Eisenhardt, 1989). Given that our phenomenon has seen little to no attention from existing theory, theory-building is appropriate to deduce feasible answers to resolve the current lacunae in research (Eisenhardt, 2021; Eisenhardt & Graebner, 2007).

3.4. Sampling Strategy

Consistent with our research approach, we opted for a purposive sample to select participants who meet certain criteria and characteristics (Easterby-Smith et al., 2021). As our methodology was based on an exploratory approach, we aimed to explore the experiences of participants who are operating in SSA and have thus been directly affected by the challenges and opportunities in this context. Furthermore, purposive sampling was suitable as we wanted to identify participants with specific characteristics, in our case sustainable entrepreneurs who have successfully implemented sustainable business practices in SSA to see similarities and differences throughout our study.

For our sampling, the following criteria were determined:

- 1) Entrepreneurial ventures that meet triple bottom line sustainability, or researchers and economists with extensive knowledge on sustainable entrepreneurship.
- 2) Participants should be geographically operating in Sub-Saharan Africa, or have previously operated in Sub-Saharan Africa
- 3) Entrepreneurial activities started after the year 2000, or the participants are members of an institutional establishment that centers on sustainability or entrepreneurship.

The sample selection criteria ensured that the entrepreneurs operated in a contemporary context, possessed up-to-date knowledge, and are likely to have developed innovative solutions to environmental and social challenges. Focusing on recent sustainable

entrepreneurs, the study could identify new approaches and innovative strategies to operate successfully in this unique Sub-Saharan environment. In addition, researchers and economists working in SSA could provide us with a deeper understanding of the context and therefore give us new insights and suggestions on how to approach research studies on sustainable entrepreneurs. Through our selected criteria, we adopted the principle that theory-building should clearly identify and explain the study's delimitation (Eisenhardt, 2021).

After the selection of our sampling criteria, we sought to identify sustainable entrepreneurs in the Sub-Saharan region who have already made an impact, intending to understand how sustainable entrepreneurs operate in their institutional environment. Therefore, the non-profit organization Ashoka, which is known for identifying and supporting leading social entrepreneurs worldwide (Ashoka, 2023), suited our sampling process. Although Ashoka specializes in identifying leading social entrepreneurs, we found it to be a valuable platform that allowed us to access sustainable entrepreneurs who meet our criteria. By filtering for sustainable entrepreneurs operating in Africa, we were able to identify 241 entrepreneurs. Then, through further screening, we identified a total of 62 entrepreneurs that fit our criteria.

We additionally identified sustainable entrepreneurs through the organization Unreasonable Group (Unreasonable, 2023), of which three fit our criteria. Furthermore, participants referred us to possible candidates that could be useful to this study. This is indicative of the snowball method, as the researcher recruits more participants through other participants or their personal network and asks them to pass on possible suitable candidates (Easterby-Smith et al., 2021). We also investigated our personal network for possible participants that could fit our criteria.

3.5. Data Collection

3.5.1. Overview of Data

In our data collection, we focused on the collection of interviews as primary data, with the aim to collect data based on the personal experiences and motivation of the participants (Easterby-Smith et al., 2021). Interviews were therefore the appropriate method, as they illustrate the different viewpoints of individuals rather than facts and figures (Warren, 2002). The overarching goal is to identify themes and patterns in our interviews when analyzing the data at a later stage (Eisenhardt, 1989).

The interviews were conducted over three months, from March 2023 to May 2023, conducted in English and online through Google Meets or Zoom, due to the geographical distance between us and the participants. The recording of the interview session was transcribed afterwards. A total of 20 interviews were held with a total of 23 interview partners. Interviews were conducted with the entrepreneurial founder, with employees of the innovation department, or with the founder together with the team. A total of 18 hours 13min of interviews were completed and a total of 249 pages were transcribed (*Table 1*).

The interviews ranged in length from 23 to 112 minutes, depending on the availability of the interviewee. 18 of our interviews, with 15 entrepreneurs and three researchers, were purposed to explore the relationship between entrepreneurs, their ecosystems, and external enablers. Furthermore, we had two more interviews with ID19 to support us through the research process and add quality to the interview design and our findings. Being both deeply rooted in the Swedish and Sub-Saharan context, ID19 was able to exemplify certain nuances we should be aware of and assisted with translating Sub-Saharan empiricism to the Swedish academic context. This further enriched our study and made it more objective, as to satisfy our axiological pursuit of reducing biases.

In addition, the primary data from our interviews was complemented by the collection of secondary data from a range of alternative sources, including participants' Ashoka Profiles, LinkedIn profiles, company websites, archival data from organizations, and governmental reports. Through the collection of data from a variety of sources, we could build a holistic perspective on the research topic and improve the quality of the data (Easterby-Smith et al., 2021). This combination of primary and secondary data allowed us to build intimate insights on entrepreneurs and their ventures, to fully understand the context of participants in the SSA.

For secondary data, the Ashoka website gave us further information into the initial problem they are trying to solve, the strategy their company is following, but also who they are as individuals. This prepared us for interviews and allowed us to make intimate inquiries into the information that was pre-established by their profile. Furthermore, we analyzed LinkedIn profiles for their network connections and social media activity to better understand their professional background, personal interests, and the interconnectedness of their network. For example, we found that several of our participants were connected to one another, meaning that we were able to verify the interpersonal relationships that promote sustainable entrepreneurship in SSA. Company

websites and archival data provided valuable insights into past and current strategies for the participants' venture. By asking them for archival information after the interview, several participants were willing to share pitch decks, company reports and vision statements. Lastly, to expand our understanding of the research context, we investigated governmental data and public reports, to quantify the current and future potential of sustainable entrepreneurship.

Table 1: Overview of Participants

Participant	Interviewee ID	Country of Operations	Role	Focus	Time
Dan Asare-Kyei 21.03.2023	01	Ghana	Founder/ CEO	Rural Agriculture Digital Literacy	34min
Osmond Mugweni 24.03.2023	02	Zimbabwe	Founder	Rural Agriculture Community Development	67min
Jenny Jakobsson 27.03.2023	03	Sweden / SSA	Founding Member	Sustainable Development Business Incubation	52min
Evariste Aohoui 28.03.2023	04	Ivory Coast	Founder	E-Waste Management Community Education	67min
Anonymous 1 31.03.2023	05	Kenya	Innovation Manager	Circular Economy Sanitation	49min
Lawrence Afere 31.03.2023	06	Nigeria	Founder	Sustainable Agriculture Entrepreneurial Training	56min
Mike Mutungi 04.04.2023	07	Kenya	Founder	Healthcare Education Youth Empowerment	81min
Femi Kayode 04.04.2023	08	Nigeria	Founder	Veterinary medicine Disease Prevention	47min
Tony Joy 07.04.2023	09	Nigeria	Founder	Female Emancipation Circular Economy	58min
Kevine Kagirimpundu 07.04.2023	10	Rwanda	Founder	Eco-Fashion Community Education	38min
Newton Waniba 22.04.2023	11	South Sudan	Founder	Business Incubation Digital Development	71min
Nabintu Mujambere 24.04.2023	12	DRC	Founder	Community Education Business Incubation	68min
Francois du Toit 26.04.2023	13	South Africa	CEO	Conservation Economy Community Development	112min
Nyankomo Marwa 27.04.2023	14	South Africa/ Tanzania	Researcher	Small Business Finance Digital Transformation	44min
Anonymous 2 01.05.2023	15	South Africa	Researcher	Public Policy Development Finance	33min
Paul Cryer 02.05.2023	16	South Africa	Ecologist	Conservation Economy Ecological Preservation	40min
Liisa Smits 10.05.2023	17	Ghana	Founder	Climate Forecast Agricultural Empowerment	28min
Naomi Tulay-Solanke 13.05.2023	18	Liberia	Founder	Female Emancipation Community Healthcare	23min
Anonymous 3 27.01.2023 02.05.2023	19	Sweden	Researcher	Family Entrepreneurship Sustainable Development	120min

3.5.2. Interview Design

The interview process remained the same for all interviewees. Before the interview, a GDPR compliance form was sent to inform participants about the usage of the data and their rights concerning the data collected (APPENDIX A). To ensure informed consent, signed GDPR forms were collected no later than the day of submission. We held ourselves to several standards during the interview. It was essential to obtain informed consent for the recording and transcription of the interview (Warren, 2002). We also provided information about our research purpose, as well as their right to withdraw from the study at any time until submission. In addition, participants were asked before and after the interview if they wished for their identity to be disclosed or kept confidential, to ensure that they were comfortable with their personal decision. We also formulated an interview guide to ensure that each participant was interviewed to a comparable extent.

To avoid limiting the discussion to a rigid interview structure, we relied on a semi-structured interview guide (Easterby-Smith et al., 2021). The interview design consists of several main themes with guiding questions for each thematic block (Appendix B). To explore the context of sustainable entrepreneurs in SSA, we created a different interview guide for researchers to look more closely at the macroeconomic environment rather than the individual profile (Appendix C). This allowed flexibility for personalized follow-up questions more deeply explore a particular topic.

In line with the Eisenhardt Method (1989), we proceeded to assess our pursuit of theoretical saturation, through cycling our interviews. In total we conducted three cycles, where theoretical saturation became apparent. The first cycle consisted of eight interviews with entrepreneurs to explore the dynamics of sustainable entrepreneurship in SSA. The second cycle of six interviews mixed entrepreneurs with researchers, to synchronize contextual insights with academic understandings. The third cycle had four interviews validating our analytical findings and making final adjustments where necessary. Each cycle furthered our understanding of the research context, and therefore reshaped our interview design.

The interview design for the first cycling was based on four main themes: background of the sustainable entrepreneur, recognizing the venture, engaging in sustainable entrepreneurship, and the external environment. The second cycle persisted with these themes but shifted focus to the ecosystem and institutional environment. Our

third cycle combined both interview designs to question the core gaps of our findings and possibly find unanticipated insights.

The entrepreneurial background intended to find information about the entrepreneur, venture, and possible instigators for entrepreneurial activities in order personal characteristics and GCs that defined the entrepreneurial journey. In the second section, we asked a series of questions that clarified the processes of venture creation, the capabilities surrounding opportunity recognition, and the challenges and support received during the venture creation process. In sustainable entrepreneurship, we asked questions related to the entrepreneur's triple bottom line approach to better understand the context of sustainability and which strategies are beneficial or less beneficial in this context. The external environment explored how the macro- and microenvironment has influenced their ability to pursue sustainable entrepreneurship.

In the second cycle of interviews, we revised our interview guide based on initial analysis (Eisenhardt, 1989). The main themes of the interview design remained the same, but the questions within the themes were more focused on culture and underlying circumstances that led to the creation of the venture and becoming sustainably active, as these were core responses in our first cycle. Moreover, the aspect of entrepreneurship by choice or necessity was added, as we identified this to be an interesting motivation behind venture creation. As community involvement was intensely discussed in the first cycle, we noted that more questions investigating ecosystem pillars would prove to be useful in determining the importance of extant literature in the Sub-Saharan context. The third cycle followed the design of the two interview guides, so that we could ask questions that were unaddressed in previous interviews.

3.6. Data Analysis

3.6.1. Choice of Analysis

The data collected in this study was analyzed through thematic means. Thematic analyses methodically identify, analyze, and report themes within a data set, where a theme is a meaningful patterned response in relation to the research question (Braun & Clarke, 2006). Thus, we searched for patterns that can exemplify the relationship between sustainable entrepreneurs and GCs, or meaningful factors that highlight entrepreneurial enablement. The value of using a thematic analysis, given this study, lies in its flexible

approach to research, the possibility for variety in identified revelations, and its acknowledgement of certain axiological principles (Braun & Clarke, 2006).

Regarding its flexibility, a thematic analysis has no established commitments to specific research paradigms, methods, nor theoretical frameworks, but the design must match the research intent (Braun & Clarke, 2006). Since we explored relationships between multiple phenomena, we adopted methods, philosophies, and theories that did not interfere with the true intent of this study. As our study was data-driven, we avoided fitting codes into preconceived notions (Braun & Clarke, 2006), enhancing our ability to capture themes that were strongly linked to the data (Patton, 1990). We therefore looked for “keyness” in our data and searched for important qualities that answered our research question; themes may therefore originate from data taken from some, not all, research participants (Braun & Clarke, 2006, p.82). This qualitative approach allowed us to contribute with previously undiscovered insights that were important in conveying the relationships between EEs, the entrepreneurial agent, and sustainable ecosystems.

Moreover, a thematic analysis offered the opportunity to generate unanticipated findings, highlight connections and divergences across the data set, and a more psychosocial interpretation of data (Braun & Clarke, 2006). One core aspect of thematic analysis is that it allows interpretations on multiple aspects on the research topic (Boyatzis, 1998). Since we explored themes that relate to entrepreneurial agents, sustainable ecosystems and EEs, we argue that a wide variety of themes were relevant at different levels of the research topic. This is once more indicative of a thematic analysis, as themes should summarize the key features across the data set (Braun & Clarke, 2006).

Lastly, a thematic analysis works to reflect and uncover the surface of reality (Braun and Clarke, 2006). Thus, there were social dynamics included in trying to satisfy these goals. In other words, identified themes were considerate of the social reality in which they existed. This is where the axiological stance of the researcher became apparent: themes are identified, generated, and reported by the researcher (Ely et al., 1997; Taylor & Ussher, 2001). As our axiological stance acknowledged, we reflected on the reality in which our findings reside, but as we were personally disconnected from our research context, we held inherent biases that could reflect a reality closer to our own.

3.6.2. Analysis Approach

To explore relations between different phenomena and produce a holistic overview of social structures that affect entrepreneurial enablement in SSA, we processed our data by integrating the six phases of thematic analysis outlined by Braun & Clarke (2006) with Eisenhardt's (1989) eight steps to theory building. Our approach to how we analyzed data is presented in *Table 2*.

Table 2: Approach to Data Analysis (Braun & Clarke, 2006; Eisenhardt, 1989)

Phase	Braun & Clarke (2006)	Eisenhardt (1989)
Data Collection	<ul style="list-style-type: none"> Familiarizing yourself with your data" by transcribing data reading and re-reading the data, and noting down initial ideas. 	<ul style="list-style-type: none"> Getting started by defining the research design Selecting cases through sampling strategy Crafting instruments and protocols by defining data collection methods Entering the field by collecting data and making initial notes
Data Reduction	<ul style="list-style-type: none"> Generating initial codes by coding interesting features of the data in a systematic fashion across the entire data set Searching for themes by collating codes into potential themes, gathering all data relevant to each potential them 	<ul style="list-style-type: none"> Analysing data through within- and cross-case analysis Shaping hypotheses by searching for connections between codes and constructs, and uncovering the 'why' of the relationship
Data Display	<ul style="list-style-type: none"> Reviewing themes by checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2). generating a thematic map of the analysis. 	<ul style="list-style-type: none"> Enfolding literature by comparing findings to literature to explore conflicts and similarities
Verification and Conclusion	<ul style="list-style-type: none"> Defining and renaming themes through an ongoing analysis to refine the specifics of each theme, and the ensure that the overall analysis summarizes the research study 	<ul style="list-style-type: none"> Reaching closure by gathering new data and testing it for (dis)similarities with existing data, until theoretical saturation
Theory Development	<ul style="list-style-type: none"> Producing the report by selecting examples that convey the analysis findings and relate back to the research question and literature. 	<ul style="list-style-type: none"> Theoretical saturation is reached

The first phase of thematic analysis – familiarizing yourself with your data – and the first four steps of theory building exemplified the first stage of our data analysis, *Data Collection*. The Getting Started, Selecting Cases, and Crafting Instruments and Protocols steps from Eisenhardt (1989) were extensively discussed in previous sections. The analytical aspect of this phase involved expansively reading our transcripts and taking notes. From excerpts, we described the contents of the quote. We chose to describe excerpts separately, so that we could reconvene and triangulate our ideas into more purposeful descriptions. Furthermore, the decision to assess each participant individually before assessing the entire data set satisfied Eisenhardt's (1989) approach to build intimate familiarity with each individual participant as a standalone entity.

The second stage, *Data Reduction*, encompassed the second and third phase of thematic analysis, and fifth and sixth step of theory building. Here, we first followed Braun & Clarke's (2006), generating initial codes. Meaning that, for each participant, we collated a select group of descriptions that fit together as part of a noteworthy commonality and bundled them into their own category. We did this for all participants,

and then transitioned to a cross-participant analysis across the data set, suggested by both Braun & Clarke (2006) and Eisenhardt (1989).

Categories could then be viewed across the data set and be reduced to constructs that highlighted commonalities and differences between participants. To incorporate the final two principles, searching for themes (Braun & Clarke, 2006) and shaping hypotheses (Eisenhardt, 1989), we collected similar constructs and reduced those to themes. These themes were broad enough to allow for interpretation across multiple dimensions of our research study (Boyatzis, 1998), yet narrow enough to convey unanticipated and unique findings (Braun & Clarke, 2006). In total, we coded 114 categories, 29 constructs, and six themes (Appendix D).

The third stage, *data display*, explored the relationships between various dimensions of our research study. Thus, we searched for commonalities between different phenomena and assessed how entrepreneurs understood and acted around different phenomena (Eisenhardt et al., 2016). Since Braun and Clarke (2006) attribute a thematic map of the analysis to reviewing themes, we mapped relationships between different constructs and linked them to individual, communal, and structural features. Moreover, our approach emphasized abduction during this stage by connecting data-driven themes to extant literature. Thus, we followed Eisenhardt's (1989) step to compare our findings to literature and to discover potential commonalities and differences. This gave us a multidisciplinary understanding of our findings.

The fourth stage, *verification and conclusion*, was rather deductive. Here, we continued to gather new data and tested it to determine the quality of our framework. Similarities in new data corroborated our findings; dissimilarities, when significant, were added to new or existent constructs and themes. This followed Eisenhardt's (1989) method on reaching closure, where new data is generated until theoretical saturation is reached. Notably, with new data, we were also incorporative of Braun and Clarke's (2006) defining and renaming themes and underwent a continuous analysis to ensure our thematic dimensions summarized the research study. Thus, systemic relationships were reshaped, constructs were regenerated or relocated, and themes were redefined. During this stage, we also adopted participant validation, a crucial technique for credibility, in which analytical findings are tested with the participants from whom the data were originally derived (Lincoln & Guba, 1985). Our findings were sent back to our research

participants, who were encouraged to provide constructive feedback that could help in enhancing the findings of the research study.

The last stage, *theory development*, intertwined with the moment we reached theoretical saturation. With all data generated and tested, we finalized the report by selecting extracts that best conveyed the story of our analytical findings and related it back to our research study and the chosen disciplines in which this research aimed to contribute. By summarizing our findings and contributions, we were able to close the data analysis phase of our research and structure our study to fit the intended outcome.

3.7. Ethical Considerations

Researchers have a responsibility for addressing ethical considerations and mitigating risks. To ensure ethical research processes, we chose to adopt the eleven principles of ethical research by Bell and Bryman (2007), as well as Guba's (1981) formative contributions to trustworthiness in research.

3.7.1. Ethical Principles of Management Research

Bell and Bryman (2007, p. 71) introduced eleven ethical principles that should define business research, with the intent to highlight the relationship between research participants and researchers, data and participant rights, and stakeholder transparency throughout the process. To appropriately operate within research studies, researchers are expected to abide by the following (*Table 3*):

Table 3: Adapted from Ethical Principles (Bell & Bryman, 2007, p.71)

Principle	Definition
Harm to participants	the assurance that the wellbeing of both researcher and participant are met during the research process
Dignity	a degree of (mutual) respect in I-participant relationship in order to avoid any potential psychological anxieties
Informed consent	the expression of approval, and understanding of the research study, from the research participants
Privacy	the need to install adequate protection measurements for the research participants and the data associated with them
Confidentiality	the need to speak truthfully about the research intent, the participant role, and the implications that may follow
Anonymity	the need to protect the identity of individuals and organizations involved in the research.
Deception	the need to speak truthfully about the research intent, the participant role, and the implications that may follow
Affiliation	the need to declare any associations that would have had an influence on the research process or results.
Honesty and Transparency	the need for open and truthful communication to all parties involved in the research process
Reciprocity	the understanding that the research study should require a collaborative relationship where all parties involved can derive some sort of benefit
Misrepresentation	the avoidance of false, biased, or misleading research

A GDPR-consent form was sent to participants before the interview, in which we expressed the ethical principles, and discussed these matters further in the interview meeting. Regarding informed consent and privacy, the GDPR-consent form served as the validation of these principles. Consent forms could be withdrawn at any time and the participants would be removed from the study. For confidentiality, we expressed the right to full or partial withdrawal of information at any point during the thesis period. Anonymity was covered by asking whether the participants preferred their identity to be disclosed or confidential before and after the interview, as well as upon sending the thesis findings to the research participants. By describing our research purpose and possible implications of participation, we adhered to minimizing deception. The amalgamation of these standards produced honest and truthful communication, further following honesty and transparency.

During the interview, we met the well-being of the participants by allowing them to speak as freely as they wished. If comments were made that should be redacted, we did so. We also ensured that each participant understood their independence during the interview and that our questions should not direct them to desired answers. Participants were not required to maintain video connection and could mute their audio when desired. Bandwidth issues or disconnected virtual meetings were met with patience.

Ensuring Reciprocity and avoiding Misrepresentation were key during the entire data analysis process, as member checking (Lincoln & Guba, 1985) mitigated our inherent biases and aimed to provide a symbiotic relationship between researcher and participant. Our axiological limitations were also acknowledged to create open communication about our potential biases. We also repeatedly expressed that this study was conducted by us with the intent to capture the sentiments of Sub-Saharan communities, and that it was in no way conducted with exploitative motivations. By mitigating our biases, we could give voice to both our values, and those of our research participants.

Regarding affiliations, we acknowledge that several interview participants were professors, either at JIBS or University of Stellenbosch. Given our involvement in both universities, relationships were pre-established. However, these participants were treated similarly to other participants and previously established relationships were disassociated from.

3.7.2. Trustworthiness in Research

Guba (1981) set four criteria to determine the trustworthiness of research studies: credibility, transferability, dependability, and confirmability. Credibility refers to whether research findings are truthful. Transferability assumes that the research should be unconditional and could be applicable to different contexts. Dependability expects that results of a study are consistent given different circumstances in which similar data was collected. Finally, confirmability supposes that results are objective and would be alike if done by different researchers (Guba, 1981). This study follows these four criteria, but recognizes that axiological limitations may have influenced, to some extent, the ability to justify these criteria.

We confirm that this study is *credible* for various reasons. Firstly, the sampling of different stakeholders was intended to bring in different perspectives. By including different perspectives, we mitigated the chance of developing biases towards a specific group, business process, or entrepreneurial identity, and allowed for a truthful understanding of the Sub-Saharan region. Furthermore, we were able to attend the External Enabler Workshop (16.03.2023) and Christina Theodoraki's mock lecture and research seminar concerning entrepreneurial ecosystems (05.03.2023). During these events, we had the opportunity to discuss and present our research intents to leading scholars in the areas of external enablement and entrepreneurial ecosystem development. By talking to well-established researchers, we were able to generate new insights and reflect on our previously made progress by adopting viewpoints from those external to the research study (Shenton, 2004). Finally, through member-checking (Lincoln & Guba, 1985), we were able to verify our results as truthful. We also processed our codes, categories, constructs, and themes individually and collectively, further enhancing the triangulation of findings. We do acknowledge that we may have inherent biases and therefore, while we consider that credibility is achieved by minimizing these biases, someone could oppose this stance.

We argue that the findings in this study are *transferable*. By systematically assessing our research study, we were able to express relationships that are paramount to the foundation of a sustainable entrepreneurship ecosystem. Although the empirical context covers a variety of countries in SSA, we believe that our identified dimensions and themes are applicable to different global regions. While we shall not argue for the transferability of the qualities we identified within our relationships – a supportive

relationship in SSA may be a hindrance elsewhere, and vice versa – we pose that the nature of these relationships maintains to exist. Lastly, our findings are consistent with pre-established frameworks that apply to a wide range of contexts (Davidsson et al., 2020; Isenberg, 2011; Spigel, 2017). Thus, this study generally meets transferability for studies that are relatively similar to the context of our study, but it could be open to losing that claim in extremely different contexts.

The previous arguments illustrate why *dependability* is justified in this study as well. Were someone to study the same phenomena but approach this quantitatively or in different regions, we would expect similar relational dimensions to arise. To follow similar coding techniques, we relied on inter-coder reliability. Inter-coder reliability is a method in which coding focus lies on understanding agreed-upon guidelines to ensure consistency (O'Connor & Joffe, 2020). By establishing rules on how to code from descriptions to themes, we were able to analyze data independently. In scenarios where disagreement emerged, we adopted several principles of triangulation. Triangulation is the idea of streamlining differing views to overcome the strengths, limitations, and biases of a chosen research design (Bergman, 2008). In our case, whenever we disagreed, we brought forth our individual positions and gave one another constructive feedback until a consensus was reached. We also ensured dependability by documenting our research study clearly and in detail. By recording all interviews, transcribing them, introducing clear coding schemes, and exemplifying these within our study, other researchers could reach similar conclusions through the same methods. Thus, this study is dependable, albeit susceptible to studies that follow inherently different methods to replicate this study.

Our philosophical dispositions are fundamentally against the motivation to denote this study as *confirmable*. Epistemologically, we posit that there is no objective truth, only a rational assumption of what can be considered truth given a social context (Albert et al., 2020; Bhaskar, 2011). Similarly, we are burdened by personal biases that cannot be removed, only minimized (Saunders et al., 2019). Therefore, to call this study confirmable would be philosophically inconsistent. However, through member-checking (Lincoln and Guba, 1985), and staying consistent with judgmental rationalism (Albert et al., 2020; Bhaskar, 2011), we would argue that our results are a valid truth. Similarly, by having multiple discussions with ID19, we were able to receive research-specific feedback that enriched the potential for objectivity. The adoption of triangulation also

minimized biases in our pursuit of objectivity. So, while this study intends to be confirmable and we argue that this has been achieved to our best efforts, we cannot fully claim confirmability due this research's philosophical stance.

4. Findings

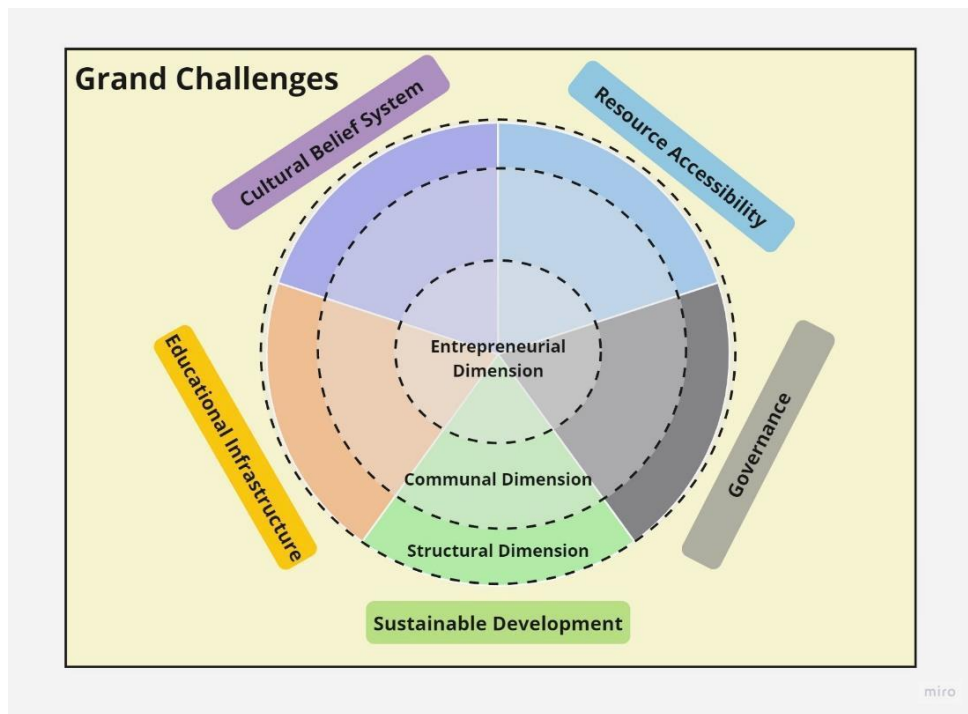
The contents of this chapter illustrate the empirical findings that provide the context to our research question. First, we present the overview of our findings, including the presence of five ecosystem themes in three distinct dimensions of entrepreneurial ecosystems, and how GCs led to entrepreneurial action. Next, we elaborate on GCs, and how the entrepreneurial perception, evaluation, and action took place in realizing venture ideas. Then, we dedicate six sections to emphasize the importance of each theme, the interplay of different dimensions and visualize this through illustrative quotes by our participants.

Following our research purpose, we identified five core themes that influenced the agent-ecosystem relationship in acting on GCs: sustainable development, cultural belief systems, educational infrastructure, governance, and resource accessibility. Each theme was prevalent in individual ventures, local communities, and macro-environmental structures. The method in which themes interacted with aspects of ecosystems highlighted a degree of interdependence yet separation. Thus, the five themes created interplay across three different dimensions of sustainable entrepreneurial ecosystems: the entrepreneurial (micro-) dimension, the communal (meso-) dimension, and the structural (macro-) dimension.

Moreover, one additional theme, Grand Challenges as Enablers, described the external enablers. Here, we exemplify that interview participants initially perceived GCs as opportune for sustainable entrepreneurship. Following, entrepreneurs evaluated the existence of GCs within their context and assessed the viability of opportunities. A favorable opportunity then became actionable to initiate solutions for the identified challenges. We also highlight the complexity of the Sub-Saharan region through the variety of different GCs expressed. Lastly, GCs come in as external events but are central to the venture, as it illuminates the stages of venture creation that precede ecosystem interaction. Only after combining with the various ecosystem influences did entrepreneurs shape how to engage with GCs and were we able to identify how entrepreneurs chose to respond to GCs, and how ecosystems fostered the development of sustainable entrepreneurship.

We present an overview of our findings in *Figure 2*, highlighting the different dimensions and themes. A more detailed overview, including categories and constructs that led to themes, are found in Appendix D.

Figure 2: Sustainable Entrepreneurial Ecosystem



4.1. Grand Challenges as Enablers

GCs are highly complex barriers to development, with a societal impact, that require interdependent solutions (George et al., 2016). The nature of GCs can differ, and our participants perceived several GCs. Most ventures addressed poverty, climate volatility, or unemployment. Digitalization, healthcare, gender equality, and education were also mentioned as challenges.

Specifically, one antecedent for perceiving GCs was visibility. If a GC was more noticeable, our participants were more likely to perceive the need for action. This was particularly prevalent in environmental challenges. For instance, both ID02 and ID04, whose ventures focus on environmental regeneration, observed the rapid deterioration in their local environments:

“I was helping cattle from the late 50s to the early 60s. [...] We used to take our cattle [...] and you get these heavy storms [...] and you will get flooding and rivers were filling up. They were clean and full, then fish were coming up and we would catch fish in the grass. [...] in the 80s, this completely changed. Those streams that used to run clean water, with the fish coming up, were now silted. Now you will see sand, you don't see water. [...] So that has changed in in my lifetime.” (ID02)

FINDINGS

“We have plenty of rainforest, almost the length of our forest was covered by rainforest.

But today all that disappears.” (ID04)

Moreover, structural inaction to social challenges fueled the perception of comprehending the needs of social issues. In other words, entrepreneurs realized the gravity of poverty, misguided education, or unsustainable business practices, because institutions give little attention to these matters. ID12 reflected on the political environment and how social challenges are aggravated by inaction:

“I feel like our young people don't know much about what is going on in our country.

There is so much poverty that people do not care about politics, and that can be very dangerous sometimes, because when people do not care, they let go.” (ID12)

The perception of GCs, in combination with structural inaction, was the core driver for why entrepreneurs were inspired to follow sustainable careers. We noticed that the individual paths to sustainability were often a response out of frustration. In these scenarios, our participants sought to investigate areas of interest and evaluate potential solutions to GCs. When evaluating opportunities for sustainable entrepreneurship, participants assessed the scope of GCs to judge entrepreneurial opportunities. Difficult challenges that affected a large group of individuals were catalysts for entrepreneurial opportunities, as ID13 expressed:

“We started to get into food security, because we recognized that it's a dire need. [...]

We've got some areas where there's between 80 and 90 percent unemployment, where the only way to actually eat is to poach.” (ID13)

Being affected by GCs themselves, our participants also communicated a ‘willingness to try’ solutions to evaluate opportunities. In other words, entrepreneurs reflected on their personal role in suggesting solutions for GCs, as a result to rise above institutional inaction. ID04, facing the lack of structural support, felt a personal expectation to evaluate sustainable opportunities as a way of tackling GCs:

“For many years, the government has not taken any initiative or any responsibilities to address that issue. So, it shocked me, and I said: okay, but if nothing has been done until now, if I don't expect to do that, maybe nothing will be done after me. So, let's try to do something, let's try deal with that issue, even if I know that it is a big issue.”

(ID04)

Once opportunities were evaluated and participants drew the conclusion that change should be initiated by themselves, different factors sparked entrepreneurial action. A

FINDINGS

prominent reason for action was the realization that one solution could address multiple challenges. Since we studied triple-bottom line entrepreneurs, all ventures proposed interconnected goals; some entrepreneurs were oriented to one of the three pillars, however. Moreover, some entrepreneurs were more vocal about targeting interconnected sustainability goals than others. ID09, for example, clearly identified how realizing her entrepreneurial venture acted on multiple GCs:

“In creating the system, we're solving a couple of problems together at the same time. So, we are looking at the environment; we are looking at poverty reduction and monitoring; having a voice, we are looking at cognitive development. All at the same time.” (ID09)

In our findings (*Table 4*), entrepreneurs identified the existence of GCs. Here, entrepreneurs were adamant on responding to visible challenges, either challenges that manifested as physical artefacts, or as a psychosocial enigma disenfranchising a reachable social group. Next, they assessed the lack of current initiatives and evaluated their personal strategies to address GCs. In some scenarios, feasibility came as a personal instinct. In other scenarios, the need to respond outweighed the potential failure of initiatives. This ultimately led to entrepreneurial action, where entrepreneurs acted on the solution for a variety of psychological, motivational, and contextual reasons. Action itself was still responsive to GCs. The process of creating and developing ventures, and working within an ecosystem were dependent on individual, communal, and structural dimensions.

FINDINGS

Table 4: Overview Grand Challenges

Constructs Grand Challenges	Description	Illustrative Quotes
Perception	Recognition and identification of visible changes or visible problems as entrepreneurial opportunities.	<p>"While we were in Malawi, we noticed that there was a tremendous need for teachers and sports teachers and nurses and stuff. But also, we had noticed that there weren't nearly as many hippopotamuses as we thought there would be. And that's also that was directly a result of human wildlife conflict." (ID13)</p> <p>"One day, I was so frustrated, because I didn't have any other satellites to compare with and realized that there is this crazy amount satellite data with a higher resolution than anywhere else in the world, including Europe and the U.S. And how come that still this region is the same region does not have a functioning weather forecast." (ID17)</p>
Evaluation	Assessment of the problem by the entrepreneur with regard to the entrepreneurial opportunity.	<p>"I'll say, the environmental pollution crisis that was just around us. And we were pretty much inspired by the government of Rwanda was banning plastic bags at the time, and we thought we would be part of the movement as well." (ID10)</p> <p>"I came to discover the conflict minerals topic that I myself didn't know much about, you know, I knew that I fled from war in Congo in 1996. But I didn't know why. Until I started researching about the conflict minerals and looking at how the extraction and exploitation impact community. And so that's how I came to, to understand why so many people, some so many communities here in the eastern Congo are being going through a lot of turmoil. " (ID12)</p>
Action	Taking action and transforming the opportunity into a tangible result in the form of entrepreneurial activities.	<p>"When I was growing up and getting input, I'll actually see it as a source of waste, as a challenge to solve, or an opportunity to explore. But now people are actually using it for so many other things [...] So it's being fully recycled. And before that, landfills were covered with tires." (ID10)</p> <p>"In order to address wildlife crime, we need to address the very real poverty issues on the outskirts of the borders, recognizing that there is historical pain, there are still people today, that remember, being forcibly removed from game reserves, and their houses burned to the ground, to make way for conservation." (ID13)</p>

4.2. Sustainable Development

Sustainable development is the core philosophy that drives sustainable entrepreneurial ecosystems to emerge. It evaluates the current perception of sustainability and socio-natural interaction with (organic and non-organic) ecosystems. The individual dimension highlighted how agents are intrinsically motivated to pursue sustainable entrepreneurship. The communal dimension uncovered the role of sustainable action in communities. The structural dimension reviewed the role of Africa as an international change-maker, as well as underlining how sustainable and economic development can reinforce one another.

Our investigation of sustainable entrepreneurs led to an obvious observation of sustainability being persistent in both the personal lives and the organizational vision. We identified that sustainability was an intrinsic response, rather than the result of socialized instruments. Meaning, sustainability was deeply engrained in our participants' psyche, and the venture process itself was more of a conscious decision than creating sustainable value.

This was made especially clear when participants hesitated to identify as a sustainable entrepreneur. Save for a select few, our participants did not consider their ventures 'sustainable' or 'entrepreneurial' at the initial stages. Rather, ventures started

FINDINGS

with the goal of community outreach, with little intention to claim business processes as inherent to the organization. ID09 echoed this sentiment:

"I didn't know some years ago that it was entrepreneurship, what I'm doing. For me, it's just a normal activity, you know, to help my community." (ID04)

We also identified that many of our participants became sustainable entrepreneurs to fulfil a passion to help others. In that sense, sustainable entrepreneurship could even be claimed as a 'faith', where the dedication of time and resources for the welfare of others is a rooted dogma articulating a call for a better future. This was reflective of ID07's feelings on why he started his venture:

"I needed to have a higher purpose in life. [...] I needed to make an impact that, for me, needed to last longer than just 5 to 10 years, or 15 or 20 years. And I came to the conclusion that whatever I was going to do in my life, I need to invest in people. Making the life or people better, suddenly became extremely important." (ID07)

Notably, another driver for our participants was the nature of becoming a sustainable entrepreneur. A large number of our participants indicated that sustainable entrepreneurship was a product of necessity. ID12 was one of our participants that started a venture out of necessity:

"I found myself obligated to do business. Really, it was not by choice. It was by obligation, I felt like this was the right way to go. And I don't have any choice at this point." (ID12)

The notion that sustainable development is a product of necessity, passion, and implicitness restructures the viewpoint of what it means to be a sustainable entrepreneur. Our findings indicate that sustainability is a core implication in the daily lives of our participants, and that venture creation was a logical step to realize these principles on a larger scale. While academia defines necessary entrepreneurship as having no alternative to entering the labor market (Block et al., 2014), our participants stated that they have a responsibility to help and therefore have no other alternative.

With the community at heart, we also noticed that ventures are structured to promote environmental awareness and social skills. ID06, explained how his venture trains farmers to incorporate a sustainable mindset and empower their own livelihood:

"We work with small scale farmers to help them benefit much more from the equity value chain, and we support them to improve skill and quality of their products and

increase profits. We are majorly organic farmers, so everything we do is sustainability-driven in terms of agroforestry practices.” (ID06)

The core driver of sustainable development in the communal dimension is the constant pursuit of community welfare. Where entrepreneurs initiate sustainable activities, we noticed that communities adopt an interdependent approach to realize venture creation. ID02 noticed how concrete activities promote the development of communal sustainability:

“You are trying to wake the belief systems in people and you've got a mixed group. Some are aware of some are not, and to bring harmony and a common vision [...] once they see a common purpose [...] everybody at least works together if there is a potential solution. Such things have an opportunity and bring people to forget that we are not equally wealthy in the same status.” (ID02)

Communal sustainability also placed focus on economic development. As our participants ventured into community development, a core goal was to instigate economic independence. By empowering individuals within the community, micro-economic structures were able to uphold sustainability and enrich the local community. ID13 highlighted the development of micro-economies and how ventures are incorporated in these structures:

“We've broken the cycle of having to buy seeds every year and that effectively is creating a little micro economy at local levels without me micromanaging.” (ID13)

While sustainability was locally enacted, institutional structures played a key role in developing capabilities for sustainable entrepreneurship. We noticed that the structural design of sustainability, embedded in institutional systems, focused on the potential development of the Sub-Saharan region. Looking at the Sub-Saharan context, many of our participants were hopeful that sustainable development would result in the region becoming a high-potential changemaker. ID11 perceived SSA as an area positioned to utilize natural resources and instigate transformative sustainability:

“I looked at how all of the villages are organized, and then I looked and said: we are more blessed, we have more resources to turn our villages better [...] we have all the opportunities available, because of where we are located.” (ID11)

Moreover, several key factors drove sustainable development, many of which can exemplify high potential in the African continent. Africa has a young population and an abundance of natural resources, both of which provide opportunities for social and

FINDINGS

environmental sustainability (Signé, 2018a; Signé, 2018b). ID07 corroborated these factors, and acknowledged two further factors that will spearhead the sustainable transition in Africa:

“When I look at Africa, within which Kenya exists, I think there are about four things that I feel are impacting Africa, and Kenya as well. The first one is population. The second is technology. The third one is value addition to raw materials. And then the fourth one is migration.” (ID07)

The application of the factors as opportunities will have economic implications. For ventures, the development of economic structures depends on social and environmental benefits. ID01 discussed how the creation of socially beneficial economies should be inherent in current and future entrepreneurs:

“Your solution must serve two needs, so one must address emerging market needs, and there must be a demand for that solution. At the same time, you have to do make money by doing good. That is essentially what it is. How do you make money as an entrepreneur by doing good for society, for community?” (ID01)

Given that a predominant number of our participants considered sustainable agriculture, we identified that social economies also intertwine with the formation with environmentally friendly economies. As natural resources are utilized to sustain economic development of ventures, it was deemed essential to form ecological patterns as part of structural processes. ID13 highlighted how natural resources carry an inherent value for firms, communities, and economic structures:

“There's a value to a clean river, it means you don't have to put it through a series treatment works to be able to drink the water. And if you've got a decent catchment area in the mountains, that looks after your water, okay, if you don't have erosion, and you don't have chemicals, chemical farming, then you can drink clean water. And so the value of a wild area is can be physically measured as an ecosystem service.” (ID13)

Our findings (Table 5) indicate that sustainability is clearly a core principle in the entrepreneur and their venture. By communicating sustainable practices, the entrepreneurs become an ecosystem-builder by expanding the scope of sustainability to various stakeholders. Community sustainability is therefore the driver that allows sustainable entrepreneurs to succeed. Given that our participants considered community welfare as the core tenet of sustainability, the potential of ventures relied on the ability for communities to adopt sustainability. Legitimizing community approaches can

FINDINGS

intensify the role of institutions in adopting sustainability; the transformation can place SSA at front of the global sustainability movements.

Sustainable entrepreneurship should therefore be seen as a wide-spread initiative that empowers further entrepreneurial creation. However, sustainable development in communities cannot be solely attributed to the agent-commune relationship and institutional influences. While concrete acts may resemble this relationship, the way sustainable belief systems are adopted depends on the evolution of cultural systems.

Table 5: Overview Sustainable Development

Sustainable Development Dimension	Constructs	Description	Illustrative Quotes
Entrepreneurial Dimension (Individual)	Sustainable entrepreneurship as an intrinsic response	Sustainable entrepreneurs feel an obligation to help and are therefore intrinsically motivated. Engaging in sustainable activities and solving problems motivates them to move forward in their business development.	"So I started looking for solutions. How do we help these farmers more? How do we ensure that they have the basic things they need to keep their livestock growing and save." (ID08) "looking at the issues that were around me, [...] you're not an entrepreneur, you have to be a problem solver, instead of I want to be a billionaire or millionaire, because there are so many opportunities around there. For us, it's more there are so many problems to solve, rather than there are so many opportunities to make money"(ID10)
Entrepreneurial Dimension (Venture)	Interconnected sustainability as the driving philosophy in ventures	A triple bottom line approach of social, environmental and economic objectives drives the ventures philosophy. The aim is to make a difference socially and environmentally while becoming economically self-sustaining.	"So you have to find a way in the environment which can unite them. You create activities that they must work together in the environment and that brings that element of interdependence." (ID02) "What we do in our communities, we focus majorly on how they can bring in the concept of circular economy in the small communities by engaging the women to ride up processes." (ID09)
Communal Dimension	Sustainable action to contribute to the community welfare	The entrepreneurial activities promoted the well-being of the community through the use of various sustainable techniques in different areas.	"So what motivated us in doing that was: People are getting sick, the environment is getting sick, the climate is changing and we know that agriculture contributes hugely to the change in climate and we could use our own cooperative to create a model, that will help to mitigate the climate change." (ID06) "A lot of girls they only disappear from school because lack of access to sanitary pads, they skip school. So the future idea is to ensure that sanitary pads is available to present young women. So they remain in school and decrease miss out days." (ID18)
Structural Dimension	Africa as an international changemaker	Africa has many opportunities in the international context that speak to Africa's high potential to establish itself as a sustainable leader of change on a global scale.	"Now, as Africans, it is not too late. But it is actually a prime season for Africa, to be able to contribute development to serve humanity. You hear again and again that yes, we can, but there must be somebody who is there static and they try" (ID11) "Becaus ewe face different problems in our countries, I mean, the problems that people are facing in Cote d'Ivoire are not very different from what we are facing in the Congo, but they're still a little bit different. Exchanging ideas is really important, because it helps us understand what is going on in their side, what is going on in our side, so that we know how to face problems." (ID12)
Structural Dimension	Consideration of sustainability in economic development	The role of sustainability in international policy-making in Africa and the integration of sustainability into economic development.	"And so look at the magnitude of the problems out there. The only thing you can do is to keep going, to keep moving, and make sure that the least that you can do can lead some sustainable impact in the future." (ID01) "So it's been a progressive journey, where we are much more holistic in our approach as human beings. They are not just health issues or education issues. You got to look at a human being as a holistic manner and address issues in an artistic way that it is more becoming the norm." (ID07) "You can imagine a metal tray and the metal tray is filled with marbles and you're going to say, we've got a system where we're interacting with this, we're going to be taking some marbles out, and we're going to be putting some marbles back. And if I have a system, that every interaction, I take out a certain number of marbles, and I always put the same amount back minus one. Sooner or later, I'm going to run out of marbles." (ID16)

4.3. Cultural Belief Systems

Cultural beliefs systems exemplify the social forces that influence entrepreneurial activities within Sub-Saharan ecosystems. In the individual dimension, we identified how culture shaped the entrepreneurial agent. In the communal dimension, local cultural standards defined the ability to form sustainable entrepreneurial standards. Lastly, elements of social marginalization, institutional history, and behavioral changes form the structural level.

While entrepreneurs identified and acted on GCs independently, various ecosystem pillars shaped the formation of ventures. Entrepreneurs do not work in a vacuum (Davidsson, 2015), and we identified that cultural factors influenced entrepreneurial decision-making, motivations, and venture boundaries. In our findings, family and past experiences played a major role in the shaping process. Family was both hindering and stimulating force, while past experiences allowed for exposure to various cultural standards to shape sustainable business behaviors.

Regarding family, we identified that intergenerational interactions influenced the ability to perceive and realize sustainable entrepreneurship. Traditional patterns formed initial beliefs on entrepreneurship, while the creation of sustainable ventures created entrepreneurship inclinations for their children. ID10 attributed an inspiring household as core influence on her ability to become a sustainable entrepreneur:

"I come from a very creative family. They all are super inspiring. My brother supported me as a young woman at the time in terms of teaching me, and I got a job from his studio, where I was learning pretty much, work ethic." (ID10)

Moreover, cultural standards on sustainable entrepreneurship extend beyond the household. We found that the way the local community is structured culturally can have a profound effect on breaking entrepreneurial barriers. An influence on ID09 to become entrepreneurial was to escape the restrictions that society had placed on her as a person:

"You've been boxed into feeling useless, worthless, impossible [...] and then I had to break through that identity. I had to break through the ideology to create something out of my life." (ID09)

The role of direct cultural principles in the formation of sustainable entrepreneurs is highly dependent on the situation. In some scenarios, a close culture associated with creativity and work ethic can inspire feelings of entrepreneurship. In other scenarios, entrepreneurship can emerge as a response to cultural dissatisfaction, to reshape narratives and emancipate marginalized groups. Driving change in cultural structures to incorporate sustainable entrepreneurship may therefore start with localized adjustments.

Specifically, local culture may prove to be especially important in expanding the scope of ventures. Local standards and national standards can be different, and at the initial stages of venture creation, the former takes priority over the latter. ID02 examined the importance of culture at the local level in sustainable entrepreneurship and concludes that it is as important the triple-bottom line:

FINDINGS

"There's no one to which you can say, this is the most important. Yes, the social, environmental, the economic, and the culture. You must fit in the culture of the people we are working with." (ID02)

Local belief systems are therefore an initial part of sustainable entrepreneurship. Without consideration of local belief systems, one may see their sustainable vision as unfit for local adaptation. ID08 elaborated on the role of local culture in venture development, and argued that adaptation from community to community is essential to bypass deeply structured practices:

"I knew this advice could work in her community, but it will not work in our community. So, the norms we grew up in, and as smart entrepreneurs, social entrepreneurs, we build our processes around those norms to aid. It cannot be different." (ID08)

We noticed that the local cultural beliefs play a significant role in ecosystem development. An entrepreneurial venture has to adopt local cultures and adapt practices to gain legitimacy. Cultural influences are adept to changes, and our findings indicate that sustainable entrepreneurship has the potential to shift belief systems and narratives. At a local level, cultures can vary, and depending on the access to different institutional structures, its importance in entrepreneurial ecosystems may differ.

In the Sub-Saharan context, one cannot assess cultural influences without acknowledging deep-rooted historical pains aggravated by European colonization over the last several centuries. Several of our participants noted that colonial expansion threw cultural systems into disarray, creating inherent mistrust in institutional systems and perceiving Western ideals, such as sustainable economies, as a refurbishment of colonial practices. ID13 reflected on the role of colonization and its effect on national cultures and institutions:

"Colonialism in a whole bunch of different forms has absolutely destroyed the fabric of society. [...] the Dutch, Portuguese, Spanish, the Germans, the Belgians, the English in particular, the Americans, the Chinese, the Japanese. All of these major nations with their colonialization forces and their false boundaries have absolutely utterly destroyed traditional and cultural values." (ID13)

However, not all participants agreed with the sentiment that sustainability is a form of neo-colonization. Rather, several participants argued that sustainability is an intrinsic cultural value in many regions of SSA, and the exposure of sustainability through ventures legitimizes a sustainable mindset. Thus, positive behavioral changes can instill

sustainability as an articulated facet of culture. ID06 expressed that his efforts have changed certain sustainable behaviors in institutional culture:

"We're looking at the impact and the success of our small school farmers. They're gradually becoming role models for young people to consider taking it as a career. So we have we are seeing that we are helping to create some institutional change, mindset, change the way that agriculture is viewed." (ID06)

Class, gender, and age were three social groups that faced social marginalization and affected the entrepreneurial activities of our participants. Regarding class, ID06 identified that, despite his close network dissuading him from sustainable agriculture, he saw a need to tackle core challenges that face the sector:

"They didn't want me to become a social entrepreneur that's coming from a background of a community where people believe that agriculture means poverty. That discourages the young people. If the small-scale farmers are prosperous in their work, the young people might be motivated to want to go into that field." (ID06)

Interestingly, attention to intersectionality was given by several female participants, showing that this challenge is particularly relevant for female entrepreneurs. Intersectionality is the idea that the convergence of multiple social identities – class, gender, age, sexuality, and race, to name a few – can lead to more profound experience of marginalization (Crenshaw, 1991). In other words, individuals who identify with two or more disenfranchised social groups may face deeper layers of discrimination in participating within the status quo. Our participants identified the intersection between class and gender, and age and gender.

On class and gender, ID09 considered her journey to creating a circular economy as resembling of the identity barriers she and her community faced:

"What we see with people related to rural communities or relating to women in communities where there's this high, annoying culture of reducing women to the sidelines, or people who are poor because they don't have money and all of that. It's that same feeling with waste if you think about it very carefully, this feeling we give to human beings; and for us to break that identity to say there is nothing useless, no one is, there's nothing called waste, and no one deserves to be treated as waste." (ID09)

In relation to age and gender, ID09 and ID10 argued that being a young female entrepreneur limited them from being taken seriously:

FINDINGS

“I was the devil at some point, you know, like: who are you? I was very young; I started when I was 23, 24. So they're like: who is this young, tiny little thing, who is giving us instructions and all of that. So that was one of the biggest challenges we had.” (ID09)

“They also doubt exactly what a younger girl is going to be doing. I was 19 at the time. [...] Even my brother did. [...] he said: no, I cannot give you money, but what I learned from him was so much more valuable than just him giving me any money because I ended up starting my business with zero money.” (ID10)

While only exemplified by a small portion of our participants, social marginalization of certain identity groups seems deeply embedded in the cultural structures of their respective countries. Trying to circumvent these labels proved to be a major challenge in their pursuit of sustainable entrepreneurship. Given that this made entrepreneurial entry more difficult, we also noticed that there is a general barrier to sustainable entrepreneurship, given cultural perceptions of the concept. Redefining this mindset surrounding sustainability proved to be a cumbersome transition for several of our participants. However, our study identified that culture becomes a fluid construct when trying to introduce sustainability to ecosystems (*Table 6*).

FINDINGS

Table 6: Overview Cultural Belief Systems

Cultural Believe System			
Dimension	Constructs	Description	Illustrative Quotes
Entrepreneurial Dimension (Individual)	Family culture as a creative force	Family dynamics that influence and shape the entrepreneur's actions.	<p>"We created this organization which works with the communities to develop and rehabilitate the environment.[...] So I think that impact to the community and the benefits I see with the community that impact my own family." (ID02)</p> <p>"I think the inspiration and the motivation to continue with the project was the picture of the future. [...] I wanted to prove to my parents that I could actually put my destiny into my own hands and then achieve success with that." (ID06)</p> <p>"Our family resources have actually helped us in this venture. So if I've never had my family support, I don't think I've ever been where I am today." (ID18)</p>
Entrepreneurial Dimension (Individual)	Past experiences shaping the entrepreneurial agent	Personal background and life experiences that influence the entrepreneur's path to be sustainable active.	<p>"And that was a motivation for me to really go into the sector. So when I discovered that, I realized that I could also [...] coming from that background [...] help the small scale farmers."(ID06)</p> <p>"My life experience is still a motivating factor. One of it is, that because of those civil wars, that displaced my grandparents. And my parents wanted to do that. And myself, had to be in what is a state of statelessness, where I was named a refugee." (ID11)</p>
Communal Dimension	Importance of cultural elements in local entrepreneurship	Local culture is a driving factor that needs to be taken into consideration when promoting change.	<p>"But what we did was not to fight with the man. What we did was not the usual advocacy and all of that.. What we did was to then narrow the thought and say, if we pay attention to the five women with us, and we can work with them to change their stories, or inspire others, then it will gradually change the narrative."(ID09)</p> <p>Because we are very strong and cultural. In our culture, we hold on to our culture so much, and it's really difficult for us to let go when it comes to culture." (ID12)</p>
Structural Dimension	The evolution of culture through behavioural change	Cultural belief systems can be shaped by collectively changed patterns of behaviour.	<p>"And so in Africa [tradition] is still probably much higher where most people still prefer to use their old ways of doing things." (ID01)</p> <p>"HIV at that point was a big stigma in the country so it's been great to see that transition[...] So, for the last 15 years, there have been a lot of work that has changed the system, but back then it was a very hostile environment."(ID07)</p>
Structural Dimension	Historical anchoring in culture	Cultural belief systems are embedded in historical events that can influence the collective consciousness and practices of a society.	<p>"The destruction of cultural identity by colonial powers is increasingly documented and recognized as just a pure capitalist, and a power control mechanism. If you read what the British did to the Zulu Nation, in after the 1879; 1880, at 1883, that's 150 years ago, and those scars and wounds run deep." (ID13)</p> <p>A lot of protected area management has been about exploiting, particularly local people in developing world, and with an agenda, which isn't particularly healthy from the developing country, and particularly those countries that were involved in colonial expansion. Very often the protected areas have a history linked to that." (ID16)</p>
Structural Dimension	Social marginalization as a barrier to legitimacy	Social marginalisation leads to the exclusion of certain groups on the fringes of society, e.g. the rural population, poor people or women.	<p>"Especially for women. They have obstacles to become entrepreneurs, or to flourish, they need to have their husbands blessing [...] That's the only way for women to flourish and to thrive and being able to reach their potential in entrepreneurship."(ID03)</p>

4.4. Educational Infrastructure

Educational Infrastructure refers to systems of education that affect the development of sustainable entrepreneurship in Sub-Saharan ecosystems. For the individual dimension, we assessed personal skill development and organizational knowledge to enhance business opportunities. The communal dimension concerns the role of education in promoting local empowerment. The structural dimension addresses how formal education systems stifle sustainability patterns and the need for multidisciplinary sources to enrich the educational value.

Expectedly, participants classified education as a core contributor to venture creation and development. Those who were exposed to diverse educational sources were more resilient in responding to challenges and positioning their firm to remain efficient. Noticeably, we saw that those who developed entrepreneurial skills through education also inspired those within the venture to develop their skills.

FINDINGS

Regarding personal development, entrepreneurs attributed their success to formal education systems. Through university and education programs, entrepreneurs were able to identify new business processes, new perspectives on sustainable entrepreneurship, and overall strategies to develop their venture. ID06 considered education to be a major contributor to the success of his venture:

"It was at that institute that I was able to learn social entrepreneurship skills. I was able to learn new skills that helped me to transform the project. It actually gave me the wings to fly with my dream, with my social entrepreneur dream, so it was a big boost for me. It was also after that that a lot of opportunities came, because now I have the skills."

(ID06)

One noticeable facet of our participant ventures was that organizational education often directly contributed to solving GCs. In particular, we identified that firms that address poverty and unemployment focus on members of these communities and incorporated them into the organizational system. By empowering others around them, entrepreneurs developed systems in which members could be trained, skills could be developed, and the overall challenge could be addressed more holistically. ID08 was one of many entrepreneurs that spoke about the development of such systems:

"We bring in more people who are jobless, who have no employment, and we educate them. We teach them how to raise birds [...] It might not be the formal education, but we think this vocational education is a very strong part of education, because once they have education and skills to use, they can engage in something productive." (ID08)

While personal development was inherently valuable to the development of ventures, the creation of systems that train employees allowed for a more streamlined understanding of organizational goals, visions, and processes. Organizational education systems enhanced infrastructure development, through the knowledge transfer of formal systems. Education, whether formal or informal, was identified to carry transitive properties, and was argued to be important in shaping sustainable entrepreneurial activities in local communities.

We also identified that education systems were established in local areas to promote local sustainability. If formal education systems lack, informal education emerges as a complement. To circumvent a lack of exposure to sustainable education, most of our participants took it upon themselves to cooperate with rural communities and

FINDINGS

established educational systems. This development can contribute to larger socio-economic implications, as ID11 expressed:

“We need to learn. There is no more emphasis on schools, people, to go into entrepreneurship. The only place is practically inland in the city. They learn from those who can open up to you. So, we just thought: we innovate for ourselves a job, and for others as well, and be part of the contributing factor to development in our nation.”

(ID11)

Standardized education may not address immediate needs on a community-by-community basis and should therefore fit the context of the region. This requires a multidisciplinary perspective, where many voices and techniques can be built-in to develop sustainable education models. Interestingly, the definition of education is subject to change when considering multidisciplinary communities. In the context of community education, both ID02 and ID10 downplayed the role of formal education, instead opting for defining education as a method of personalized instruction:

“What I learned most was you don't need training in classrooms for sustainability. You need more exposure and then knowledge so that you see where it is being applied and then see where your gap is, and you assimilate more.” (ID02)

“Education is as simple as enlightening someone. It doesn't have to be a master's degree, doesn't have to be a PhD. You just need information so that you can make your own choices.” (ID10)

At the communal level, education is contextual. Definitions differ based on initial perceptions of education and the access to pre-established systems. We identified that education responds to the pressing needs of a community, so that this may remove, or compensate for, institutional teachings that could prove inapplicable.

For ecosystems, providing methods of relevant knowledge could increase the adoption and development of sustainable entrepreneurship. Regarding education systems, our participants highlighted that educational development and urbanization work in tandem. Sustainable behaviours were more visible in cities and the rural communities were restricted to basic applications of sustainability. A major factor is that infrastructure that promotes sustainable education does not extend to rural communities, according to ID04:

FINDINGS

“When it comes to talking about waste, the big issue that we have, since there is no infrastructure and adopted education, people are not really informed, educated about that, for example, outsourcing of waste.” (ID04)

With a lack of rural infrastructure, communities that reside in these areas can be marginalized and fall behind in establishing key necessities that drive sustainable behavior. Disparity in sustainable education between urban and rural areas becomes apparent when they intersect, such as in times of conflict, as ID12 exemplified:

“We just found out that people are not educated. I mean, how would they find out if nobody taught them. [...] We had a very huge rural exodus, and so these people that come from villages, they found that they find themselves here, but they do not know how to use flashlights, for example. They do not know where to throw the plastic garbage. (ID12)”

Within formal systems, multi-disciplinary perspectives play an equally important role. In particular, the lack of interdependence between multiple stakeholders is cause for limitations in progressing sustainable development. In the context of sustainable agriculture, ID02 noticed that an overreliance on academia and ignorance of empiricism is a major barrier to multidisciplinary education systems:

“From the academia, they say no, where has this been documented or proven by science, but it’s an immediate observation of what they learned in the world; the animals used to do it and it is how the people used to live. (ID02)”

There remains discord between current education systems and perspectives that should be included, and a strong cause for this lies with reluctance to adopt open-minded academia. Meaning, education systems fail to include multidisciplinary perspectives that can provide students with a varied skill set. While ID04 reflected on this matter from the perspective of students, ID06 echoed this criticism when considering the formation of academic curriculum:

“When you go to university, you measure on only one subject and then it is most of the time, since most people live in poverty, they don't have the means to buy food and then to start some another thing. So all they know is what they have learned in university and the job that they will have learned is relative to only what they learned in university.” (ID04)

“The curriculum is built around the study, will I pass, be getting a job, and then make money? [...] the curricula is not built around mindset transformation, social

transformation. [...] it's built around, what can we get, and not what can we give? Not how we can transform our environment.” (ID06)

Our findings (Table 7) related to education highlighted several key factors. Firstly, structural institutions, in its current state, do not advocate for sustainability. Sustainable education is fractured, and regional contexts differ in their degree of incorporating sustainability. Regarding GCs, this may pose challenges to sustainable entrepreneurs, as GCs have large-scale societal implications (George et al., 2016). To circumvent fractured education systems, we noticed that sustainable entrepreneurs themselves often take initiatives to inspire sustainable mindsets among its associates. This indicated that, with a lack of structural infrastructure, entrepreneurs approach education from within.

Secondly, the definition of education in the Sub-Saharan context is ambiguous, in part due to limited educational infrastructure. Here we noticed that education could take on many forms and is intended to empower individuals through instruction, enlightenment, or creation of new standards. This could clash with educational infrastructure, as the acts by individuals to enrich their practices often go against established principles within education.

Lastly, we found that sustainability is not seen as a holistic phenomenon. Most of our participants expressed an overlap between social, environmental, and economic challenges. Therefore, education systems fail to provide the Framework for societal transformation. The failure to include all key stakeholders and perspectives hinders sustainable entrepreneurs in fully promoting sustainability as a core practice within their communities, and they are often left to take initiative and work without institutional structures that promote sustainable education.

FINDINGS

Table 7: Overview Educational Infrastructure

Educational Infrastructure			
Dimension	Constructs	Description	Illustrative Quotes
Entrepreneurial Dimension (Individual)	Skill development as a contributor for entrepreneurial opportunity recognition	Entrepreneurs develop hard and soft skills through vocational training, entrepreneurial activities and academic studies that help them identify entrepreneurial opportunities and respond to challenges.	<p>"So that observation was stimulated by my attendance to [Person]'s training and his skills on tracking and noticing what happens. So when I related that [...] we started working with communities and stimulating the environment." (ID02)</p> <p>"I ask myself every day, is it working? If it's not working, why is it not working? If it's me, I could quickly adjust if it's useful. I'm flexible, I think that's about the big part of me. So my ability to reflect and find solution." (ID08)</p> <p>"the value of education is immeasurable, I would say in the premise of an entrepreneur" (ID12).</p>
Entrepreneurial Dimension (Venture)	Vocational training to develop employee competences	Incorporation of training systems within the company to increase the competence of the employees and to maintain the quality of the companies output.	<p>"First of all, to identify them, train them, and also trying to incorporate them in a formal system within the work family. And also to make sure that they can live on what they're doing." (ID04)</p> <p>"So we turned our business a little bit upside down and started training people who started learning how do we actually work, who has the knowledge to teach [...] it was also an opportunity to create knowledge among the youth. And that's something that we're very proud of so far." (ID10)</p>
Communal Dimension	Promotion of local empowerment through education	Supporting local communities through educational activities to promote community development.	<p>"Through those educational advances that we embark, most of our users began changing or stopping from that practice and began adopting the more sustainable use of chemicals and crop protection chemicals in their farms." (ID01)</p> <p>"That's a disempower to empowered model that we put together and along this line, we organize farmers at comuna cluster levels and then register with the cooperative and manage them, so in groups of 25 to 35 farmers." (ID06)</p> <p>"But most importantly, it's about community members, genuinely engaging in their community with a culture of respect. [...] So as a direct result of that, I don't have to micromanage on the ground." (ID13)</p>
Structural Dimension	Forming sustainability patterns through education systems	Education infrastructure plays a crucial role in transferring knowledge to society and can be an effective tool for promoting sustainability.	<p>"Climate change is not yet embedded into our curriculum. And that's a trend, that the climate is changing, everybody, every way is changing, countries are changing." (ID06)</p> <p>"The education system is a key driver to social behaviors. And, you know, I think the country has been quite aggressive in introducing free education. So I think now we have good free education after secondary school, which has been a major positive." (ID07)</p>
Structural Dimension	Enriching educational approaches through multidisciplinary sources	Provide society with diverse opportunities to gather knowledge and integrate perspectives from different disciplines.	<p>"very few African universities have local research. That's a huge difference for all the universities, they very seldom have, like research project locally." (ID03)</p> <p>"I also try to the communities through that in West Africa community, we always talk about poverty, we also talk about the different problem that we have. The one thing that we forget [...] is to unveil the different opportunity that we have in West African communities. Unfortunately, we did not have any infrastructure to deal with and no education, no formal initiative to deal with the ratio, and you can see that creates a lot of problems." (ID04)</p>

4.5 Governance

Governance discusses the degrees to which different stakeholders find themselves in a leadership position, as to regulate and develop sustainable entrepreneurial ecosystems. In the individual dimension, we acknowledged individual leadership skills, and that entrepreneurial ventures retain local autonomy to circumvent unfavorable institutional structures. In the communal dimension, the inclusion of multiple stakeholders was prominent in regulating local development. In the structural dimension, we evaluated how political favoritism hinders entrepreneurial ecosystem development, and to what extent the current regulatory environment fosters sustainable development.

In consideration of organizational structures, ventures were able to steer healthy dialogue on authority. At the individual level, we noticed that very few organizational arrangements were the result of institutional structures. Instead, entrepreneurs used forms of servant leadership to create decentralized environments of mutual respect. We identified that a large portion of our participants mentored those in close proximity. This enhanced the decentralization process, where venture structures focused on disseminating

FINDINGS

leadership to the community, rather than withholding such skills to maintain control. As ID09 noted, mentorship was a core tenet that helped the venture succeed in the local communities:

“I’m not the hero. I am a driver; I am the one driving the car. The guys, they’re the Rosa Parks, they are the ones who are breaking the stops, I’m just giving them opportunities to understand that they can do it [...] people have been the ones who have been going into communities.” (ID09)

By approaching local communities and empowering them with leadership skills, our participants were able to avoid micro-management and trust in others to lead. While several of our participants found this journey easy, others were required to restructure their traditional leadership practices. ID13 discussed his transition to become a mentor, and noted that it took a conscious effort:

“I’ve been deliberately trying not to be my natural self. I am trying to be more wise and talk less and guide more. And that’s a journey that I personally have gone through in discussions with people that are close to me.” (ID13)

Given that ventures developed to promote decentralized leadership, authority was designed to initiate local autonomy. While local autonomy differed depending on the participant, the prevalent consensus was that structures were designed to prioritize community welfare. In some regions, institutional regulations were favourable, and ventures could easily incorporate locality through structural supports. In other regions, local autonomy prevailed due to unfavourable conditions to institutionalize the venture. Most interestingly, as ID3 exemplified, we found several ventures that spread local autonomy to various communities and incorporated them under one system:

“The hub is a business ecosystem, so they can build the ecosystem in the way that they believe is the best way of doing it. It is to empower entrepreneurship growth and the vision is thriving African communities.” (ID03)

Decentralized ecosystems allowed for localized adaption, resilience to bureaucracy, and an overall pursuit of sustainability goals in a holistic manner. Stakeholder involvement of local members enriches these structures. Our participants emphasized the need to consider different perspectives, to build holistic arrangements that allow for communal development.

Some participants signified a personal connection to the addressed community drives emphatic development from which flat hierarchies emerge. Other participants

FINDINGS

stated that local stakeholders were essential to contextualize the venture arrangements. Regardless, to bypass volatility and unsubstantiated power dynamics, local sustainable development required an interdisciplinary form of regulation.

Interestingly, a few participants mentioned that structures had to be rearranged to enrich collaboration. A clash between competition and cooperation was prevalent, and for sustainable development to occur, the latter was deemed to be more important. ID08 mentioned how arranging a paradigm shift from competition to collaboration required stakeholder involvement to reconcile conflict between different expectations:

“We should be helping these farmers, not fighting each other. So, I started making inquiries. So other vets in this community say yes. So, we now discuss as a team that, rather than go into a community and cause the same chaos, why do not we truly support the vets to support the families.” (ID08)

To further emphasize cooperation, we also identified that the local arrangements were structured to include partnerships. Partnerships were more formal and often considered those outside of the immediate community. ID13 highlights how bringing outside partners into communities can enhance the overall pursuit of communal development:

“We have never approached corporates for funding because there are so many other environmental non-profit organizations that are doing just that, and we didn't want to be competing with fellow environmental or heritage or conservation organizations. We would rather help nurture those relationships and work in partnership wherever we can.” (ID13)

Stakeholder involvement can create structures that are constructed with fluidity, provide constructive feedback, and provide clarity for local contexts. Stakeholders have different experiences and can provide key insights to challenges that may normally be tackled in a standardized manner. Communal cooperation was a more integrative tactic to compensate for an institutional environment characterized by volatility, favoritism, and high degrees of bureaucracy.

Noticeably, we identified that our participants were not encouraged by institutions to enter the field of sustainable entrepreneurship. Rather, the lack of institutional stability in responding to GCs inspired many of our participants to act. Particularly, ID04 noted how self-centrism emphasizes how these unfavorable conditions influences aspiring sustainable entrepreneurs:

FINDINGS

"Seeing what politicians are just dealing with things in my community, that is not the right way. Instead of bringing assistance, they are just thinking about themselves, so we have such a broadened and corrupted system that, it's quite difficult for anyone to come to a politician's way to do something. (ID04)"

Self-centrism was inherently tied to institutional systems because it favors the need for centralized governments. When considering approaches that include multiple stakeholders, expertise from others will devalue certain political opinions from those in charge. ID13 reflected on the challenges that his venture faced, specifically related to governmental structures:

"The success of a conservation economy will negate the need for governments, and it will negate the need for big business. As a direct result of that, I am acutely aware that there will be institutional resistance to establishing a conservation economy." (ID13)

Current regulatory frameworks favor established practices and, as a sustainable entrepreneur, breaking traditional structures proved to be difficult. Regulations therefore posed boundaries for entrepreneurs, in terms of creation and expansion. ID05 discussed challenges associated with expansion, and how the regulatory Frameworks limit entrepreneurial ventures in disturbing traditional business practices:

"We are impacted also by regulation, especially when we're trying to expand into like different markets. Even within Kenya itself, when you're trying to expand to other counties or other towns, you realize that we are faced with like regulatory challenges, we have to get approvals." (ID05)

Entrepreneurs therefore emphasized how cooperative discussions with institutional organizations helps the establishment of ecosystems. By shaping dialogue to legitimize the need for sustainable entrepreneurship, entrepreneurs were able to instigate belief in the reformation of established legislation. However, ID04 noted that the bureaucratic process stifled the actual execution of favourable laws for sustainable entrepreneurs, indicating that ventures maintained to work in isolation of supportive institutional structures:

"It's only a couple of years ago, that we finally have some rule of law about E-waste. Before we had a lot of communications that finally we came around with the Ministry of Environment to start reflecting together, just to draw some rule of law to regulate the sector of E-Waste. But after that, nothing happened." (ID04)

FINDINGS

Overall, community entrepreneurship relies on insiders and outsiders (*Table 8*). The integration of those parts of the community, by a single entrepreneur, can reshape narratives and create systems that emancipate actions that serve the context. Support from outsiders can come in the form of partnerships or institutional support; in SSA, partnerships compensate for institutional negligence and provide organizations with multifaceted knowledge, resources, and perspectives. Acting with local control defined the organizational structure of many of our participants. In its current state, this method will likely prevail, as only a few participants indicated that governments are cooperative in developing sustainable entrepreneurial ecosystems, instead opting for established practices. Setting such institutional boundaries may hamper the potential of sustainable entrepreneurship in SSA, although local areas may incorporate sustainability to the fullest possible extent.

FINDINGS

Table 8: Overview Governance

Governance			
Dimension	Constructs	Description	Illustrative Quotes
Entrepreneurial Dimension (Individual)	Mentorship for the dissemination of the vision	Entrepreneurs find themselves leading through mentoring to build decentralized structures.	<p>"One million leaders Africa is a project that aims to train one million young leaders in the next decade in the continent. These young leaders will go ahead to help transform their communities." (ID06)</p> <p>"The greatest investment that you can give to young people is mentorship. [...] and from that I interacted and also transmit in a way so that I also give back to someone else, because of the knowledge that I was imparted with the program." (ID07)</p>
Entrepreneurial Dimension (Venture)	Circumvention of Institutional Structures through Local Autonomy	Entrepreneurial activities based on decentralized structures controlled by local regulations to strengthen the ownership of the local communities.	<p>"so looking at the macro environment, the government policies and all of that there is little we can do. And that's why sometimes I try to distance myself as cooperative from government activities." (ID06)</p> <p>"In order for a comprehensive communal plan and a conservation economy to genuinely work, it must be owned by every individual on the ground, and not by charismatic, influential leaders. That is why this process takes longer than anything else." (ID13)</p>
Communal Dimension	Inclusion of communal stakeholders to regulate local development	Developing rural ecosystems by engaging different community actors in a symbiotic relationship to promote community ownership.	<p>"The best kind of industrialization is to localize to one, whether it's integration between rural, and whatever new ideas you're talking about, that's integration. [...] there's nothing wrong with being in a rural community. And whatever kind of developments that we're talking about can be localized. And we need to start celebrating the fact that rural is okay, rural is not poor." (ID09)</p> <p>"The African governments have been in place for so long, 60 years right, and haven't changed and there is no hope for change. So hoping the miracle would come from the top down, we can wait forever. I think we need the training and the mobilization of the workers from the bottom up." (ID14)</p> <p>"If we're going to be looking at sustainability, it's going to actually consist of, instead of a very hierarchical structure, maybe it's going to consist of a whole lot of little independent cells that operate in a highly networked manner, making up a local community in itself. And that community may interact with other communities, but it's going to have a very strong local aspect to preserve its continuity. And in that continuity, we would have the word sustainability, but in a particular kind of sustainability." (ID16)</p>
Communal Dimension	Ecosystem building through partnerships	Establish reliable and long-term partnerships to develop the business and increase the scope of the project.	<p>"So sometimes, some groups of people would have would be collected, like, especially with contract farmers, you'd find that the contractor would have access, like 1000s of farmers. And so we explore partnerships with such people so that we can reach the farmers." (ID05)</p> <p>"We didn't want to be competing with fellow environmental or heritage or conservation organizations, we would rather help nurture those relationships and and work in partnership wherever we can in in a particular area." (ID13)</p> <p>"I think what we need to start to think about is more, how can we grow this even faster, because the world is moving very, very fast at the moment. And we cannot afford any longer to do one country after another, we need to find a way to in a much quicker manner. Get the solutions out through other partners so we are more an indirect, you know, part of it." (ID17)</p>
Structural Dimension	Political favouritism influencing entrepreneurial potential	Political favouritism can hinder or foster entrepreneurial potential by creating unequal conditions for business development.	<p>"So a politician could just come in, because the politician feels that his business needs more of ABC and D, that this person starts driving a bill. That becomes a law. But it's not beneficial to small scale businesses." (ID09)</p> <p>"The structures have been put in place largely for for a very small defined number of beneficiaries." (ID13)</p>
Structural Dimension	State of Regulatory Environment to foster sustainable development	The regulatory environment plays a crucial role in constraining or promoting sustainable development. Effective regulations provide the necessary framework to guide and incentivise sustainable practices in different sectors.	<p>"Funders were like, since we've not seen anything in time, we want to go directly to the communities, let's rather build a school there and partner with a local organization or an entrepreneur. [...] Resource mobilization policies change in such a way that funders are allowed to go directly to the grassroots, you will see entrepreneurial activity developing in the sectors that are a highly sought after by the funders." (ID15)</p> <p>"Working with the government through their official extension [...] it grew over the years, we've tried multiple times to do kind of collaborations because I really believe in inclusivity and getting everybody on the train. But it has not been before. We have grown into significant numbers and operations before we have had the ability to really start to develop these relationship in an efficient manner." (ID17)</p> <p>"There are some areas where institutionalization is helping, and there are some countries where it also creates a shrinking space, or depriving young entrepreneurial agents of their full potential." (ID18)</p>

4.6. Resource Accessibility

Resource Accessibility concerns the convenience to which resources can be collected and applied to sustainable entrepreneurial ecosystems. In the individual dimension, we summarized how organizations position resources to sustain the survival of entrepreneurial ventures. The communal dimension highlighted how communities work

as initial support systems to secure local entrepreneurial development. In the structural dimension, we reviewed the role of public support in entrepreneurial environments, and the degree to which market structures provided ease-of-entry to entrepreneurial ventures.

The identification and utilization of organizational resources proved to be essential in aligning individual goals with venture capabilities. Our participants identified financial and human capital as the most prominent resources essential to sustaining the venture. Several of our participants expressed how personal finance drove the initial stages of the ventures. This tied back to the passion to initiate change; investing personal capital allowed solutions to be realized. ID13 exemplified how sustainable ventures are inherently intertwined with a personal dedication of resources:

“[Venture] is a very personal organization [...] we have people and friends and support mechanisms that do work entirely on a volunteer basis. I personally have put about [REDACTED] of my own money into [Venture] over the last three years.” (ID13)

Other resources were difficult to quantify but equally beneficial to the sustainment of ventures. Human capital served as a core complement to financial sources. Specifically, certain soft skills inherent to the entrepreneur or organizational members allowed for quick and efficient decision-making and diversification to reduce organizational vulnerabilities. ID08 reflected on what personal resources are core to sustaining a venture:

“The ability to be proactive, knowing that it will happen, maybe not now, but later in the future. It's a very good business strategy for us. [...] the idea is that if something destroys one, we can still pick up from the energy of the other one. So, we build strong, but we also diversify into a few areas so that we don't just get all our eggs in one basket.” (ID08)

A vast range of resources helped our participants in setting the stage for venture development. Both human and financial resources were attracted and utilized internally, and therefore defined the organizational boundaries of sustainable ventures. Of course, the resources within organizations were contextual to the entrepreneurial context. Different communities were able to value resources contextually, or restricted and liberated types of resources.

For resources to mobilize at initial stages of the venture, most of our participants thanked their communities as initial support systems. Rather than having to justify the viability of the projects, communities trusted in the potential mutual benefits and took initiative to realize local entrepreneurial development. Physical infrastructure, financial

FINDINGS

resources, and community volunteerism were mentioned as key resource acquisitions. For instance, ID06 expressed how much the community gave at the initial stages of the venture, something that created security for the firms:

"The support we got was from the church that I was pastoring, I was pastoring as an assistant. And we got some land from one of the farmers and [...] and then we had some newspaper organizations coming to the farm to write articles about us. [...] most of the things we used at initial state were free. The land was free; the seeds we got were free."

(ID06)

Moreover, we also noticed that financial investments into the venture by the community were set up informally. Rather than preparing contractual obligations, community members shared resources despite risks of the venture being abandoned. ID12 noted the benevolence of one community member:

"This one lady that is willing to support us. She is going to give us money that we can use for a period of time without reimbursing. And then after that period of time, we will start reimbursing slowly until we get rid of the debt, and she's not asking for interest."

(ID12)

Furthermore, communities exemplified a sense of trust in the entrepreneur and committed to the success of ventures despite hardships. Despite uncertainties, community members legitimized ventures by engaging with their products and services. ID10 discussed how convincing customers was a cumbersome process in the initial stages:

"Our product was not as good at the time. So we had to really ask customers, or the people, to actually give us the chance and, and invest in us, and so that we can continue to grow." (ID10)

Communities established pathways for ventures to access necessary resources. Physical, human, and social capital were provided by communities, which allowed ventures to invest back into communities at a later stage. This symbiosis allowed communities to streamline resources and allocate them to valuable areas of need. By securing resources from communities, ventures were able to restructure community ecosystems and apply resources to local contexts that help solve GCs. Of course, in some scenarios, the resource accessibility was a product of institutional drivers.

Our findings indicated the lack of institutional support provided contradictory perceptions. On the one hand, the non-existence of public support made resource acquisition profoundly difficult. On the other hand, the non-existence of institutional

FINDINGS

systems left market entry with a surprisingly low threshold, easing the process of starting a venture. The lack of financial support systems proved to be a hindrance for entrepreneurial development. Several entrepreneurs anticipated that their ventures and projects could have been enhanced if institutional legalizations provided loans, subsidies, or stimulus packages. ID01 expressed how scaling up ventures was a challenging process due to requirement of personal initiatives:

“That requires you to have a sufficient amount of funding to be able to scale up and be able to produce for many more that you can reach, many more people in the industry.

And the funding is very difficult in this part of the world.” (ID01)

Financial access is especially restricted due to the formation of disengaged institutional systems. Institutions are structured to promote free-market entry and limit their financial availability to sustainable entrepreneurs. Part of the reason that GCs have gone unaddressed is that, historically, institutions show little sign of supporting sustainable entrepreneurship. ID13 explored how political inaction to support sustainable finance has been indicative of his entrepreneurial environment since his venture’s inception:

“Within those traditional authorities should be institutional structures that enable them to attract funding, enable them to run businesses, enable them to do good, and operate as a as a public benefit organization. I would venture to say that there is not a single, after 25-30 years, that has got those structures correctly in place.” (ID13)

Ease of market access also interacts with institutional systems. In some scenarios, our participants indicated that liberal market systems allowed ventures to be created without the need for legislative approval. For example, ID04 was able to start his first venture without government intervention, and enhanced his venture through legislative approval afterwards:

“When I was running my NGO, I realized that I need no license to really go to the next step of my work. [...] So [Venture] is the complement of [NGO] in a strategical way to have my license, and then to be to have some recognitions by the government and then also to be able to mobilize some additional partners and then get them engaged in the work that I have started.” (ID04)

In other participants, we identified that the free-market approach led to increased competition and disadvantageous situations for sustainable entrepreneurs. Part of the reason is that customers have become accustomed to certain practices and products. ID01

highlighted the competitive environment from Ghana and the challenges his organization faced trying to introduce sustainable products:

“These conventional products are competing very well [...] it makes it difficult to penetrate the market, makes it very difficult to enter a market. So that make it difficult to actually increase adoption of your product.” (ID01)

While market diffusion was identified as a hindrance, we identified that diffusion of market information becomes increasingly more available. Several factors play a role in allowing ventures to access market information and adapt strategies to compete with conventional competitors. For instance, both ID07 and ID13 identified the benefits of digitalization in supporting ventures with assessing and entering new markets:

“In Kenya, we have like five optic fiber cables [...] that has really improved technology, internet, and so forth. And so in a way that has made the world a flat world. And so you can offer services to other global markets.” (ID07)

“It is an unbelievably difficult for a rural social sustainable development, entrepreneur, whatever, to fight their way through the bureaucracy. I think technology does make it a little easier.” (ID13)

Our findings illustrate that close contact with multiple stakeholders increases the opportunities for ventures to access resources (Table 9). Financial resources initially triggered the ability to act on GCs, while human capital shaped the way organizations strategized to enrich opportunities stemming from the challenges. Moreover, we noticed that a specific instigator of resource access was the community itself. Communities were motivated to invest personal resources into ventures, knowing that the eventual success of ventures would reassure development in the local region. Communities also served as a buffer for ventures who were unable to retrieve resources from institutional actors. As institutions were free-market oriented, ventures were met with both opportunities and challenges. A lack of legislation allowed firms to access specific markets and resources without facing intervention; that same lack of legislation is visible in support systems and created competitive environments where established businesses outperformed entrepreneurial start-ups. Thus, the symbiosis of community-agent relationships was a catalyst for venture development, especially in regions where institutional resources were negligible.

FINDINGS

Table 9: Resource Accessibility

Resource Accessibility			
Dimension	Constructs	Description	Illustrative Quotes
Entrepreneurial Dimension (Venture)	Utilization of organizational resources to sustain venture	The leveraging of resources in the form of human or financial resources helps entrepreneurs to sustain the business.	<p>"Basically what we do in terms of people, in terms of profit, because of change in funding, we want to rethink about how do we continue doing what we do with generating our own resources locally." (ID07)</p> <p>"And we want to see with that, what we can actually do with our revenue. With the revenue that we generate from all our activities and not really depend on the donations and grounds." (ID06)</p> <p>"We've received value from staff members and from board members in terms of opening doors and fundraising or just keeping the organization going." (ID13)</p>
Communal Dimension	Communities as an initial support system for local entrepreneurs	Community support helps the ventures survive in the early stages through resources, funding and human capital.	"From the training after the first day of orientation, they helped me with my staff, the room, helped me settle down. And then I went through the training. And then now I started supporting other students. I was in charge of one of the campuses. So you learn and by virtue of what you learn, there is a real big conviction to also give back." (ID07)
Structural Dimension	Ease of Market entry	Ease of entry refers to the degree of difficulty in entering and competing in a market through the regulatory environment.	<p>"By 2051, out of every four persons in the world will be African and that in itself means Africa will be the global market to begin with. It's also a young population, as well. So really, if anybody wants to invest, this will be the prime location for investment." (ID07)</p> <p>"It's very free and easy here to start a venture, it's easy to register your business. What is challenging is the idea of access to funding." (ID18)</p>
Structural Dimension	Provision of public support for entrepreneurial environments	The public support of entrepreneurial activities is crucial for fostering innovation, job creation, and economic growth.	<p>"But the problem is the mechanisms, so when you start a business, you do not have any support. So you have to make sure that you have the right support before you start. So you are sure to have the right connection before you start your business. If not, local entrepreneurs will start a business, they have to be supported by the government. That is extremely difficult." (ID04)</p> <p>"So 24,000 graduates applied, and they could only take 800. So at least they're moving in the right direction. But that number should tell you there's a huge demand, but the support system was not there." (ID14)</p>

5. Discussion

The contents of this chapter extensively discuss the value of our findings, given extant literature on three fields of entrepreneurship. First, we highlight how our findings align with existing knowledge on the EE Framework, in terms of types, characteristics, and mechanisms. Next, we position our findings in entrepreneurial ecosystem literature to extend on existing ecosystem pillars and emphasize the interplay between ecosystem dimensions and entrepreneurial activities. Additionally, we discuss the role of agents as ecosystem builders to fill institutional vulnerabilities. Lastly, we oppose current understandings of sustainable entrepreneurship and integrate intrinsic motivation, necessity entrepreneurship, and implicitness into a revised definition of sustainable entrepreneurship.

Taking a theoretical perspective, our findings discuss various facets of the EE Framework, sustainable entrepreneurial ecosystems, and sustainable entrepreneurship. As our purpose intended to combine various entrepreneurial disciplines through the analysis of our empirical context, we were able to bring forth new insights, corroborate or oppose existing insights, and streamline ideas valuable to entrepreneurship theory. How entrepreneurs enact GCs provided direct contributions to the EE Framework in terms of types, characteristics, and mechanisms. How the ecosystem fosters sustainable entrepreneurship restructured the way sustainable entrepreneurial ecosystems should be presented. Our involvement of sustainable entrepreneurs provided insights into how current sustainable entrepreneurship literature aligns with the Sub-Saharan context.

5.1. Contribution to the EE Framework

External enablers constitute external circumstances that can enable a variety of venture development (Davidsson, 2015). Different events may form to become external enablers and can be typified as being technological, regulatory, demographic, sociocultural, macroeconomic, political, or environmental in nature (Davidsson et al., 2020). In our assessment of GCs, we noticed that the complexity of challenges allowed for various types of enablement. By identifying poverty and unemployment, digitalization, healthcare and education, gender equality, and climate volatility as GCs, we were able to identify the complexity of enabling types.

Specifically, we noticed that many of our GCs worked across types of enablement. For instance, while inherently environmental, climate volatility was also opportune through cultural trends and technological progression. This corroborates the theoretical

findings of Davidsson (2015) – the opportunity of an EE may be interdependent with other external events – and Davidsson et al. (2020) – one enabler can cause other enablers to occur. Notably, the overall economic effect of a given EE does not have to be positive overall; EEs can be responsive to the undoing of other events (Davidsson, 2015). As all of our participants responded to GCs, we noticed that the enabling effect mitigated the overall negative status of a GCs. Thus, as Davidsson et al. (2021) allude to, negative impacts on society may prove to be beneficial for certain ventures.

Moreover, the characteristics of GCs were clarified. Characteristics are the inherent feature of an EE, given the scope or onset (Kimjeon & Davidsson, 2021). The onset of GCs as potential enablers was both gradual and predictable. Many of our participants noted that social challenges were the result of extensive governmental inaction. Similarly, environmental challenges are not characterized by sudden surprises in ecosystems and are rather the result of long-term and visible degradation, corroborating recent acknowledgements of the onset in climate-related events (Davidsson et al., 2020; Hinderer & Kuckertz, 2022). Regarding scope, we identified that the enablement of opportunities to address GCs led to a fluidity in all facets of the scope. While static at its inception, the community perspectives ventures held enhanced the potential for enablement to occur across spatial, temporal, sectoral, and socio-demographic scopes.

Spatial scope originated within communities, but enlarged as more communities were included as potential changemakers. Given that GCs are long-lasting challenges, the temporal scope was initially large and lengthened due to the instilment of sustainable beliefs in current and future generations. While GCs affected various industries in isolation, the interconnected approach of sustainable ventures targeted various industry challenges and thus increased the sectoral scope. Lastly, socio-demographic scope pointed to the inclusion of incrementally larger populations, where communal concerns were bundled to intensify the empowerment of various (sub) populations.

Since a variance in scope implies a variance in the potential of new possibilities (Davidsson et al., 2021), we extend on this idea and argue that a variance in one scope allows liberty to develop the ranges of other scopes. Specifically, if the temporal scope is large, then spatial, sectoral, and socio-demographic scopes have time to grow and instill potential in a larger area, group of industries, or individuals in a given population. The development of communal ecosystems, implying a set spatial and socio-demographic

scope, also allows the extension of temporal and industry scopes through the adoptability of potential opportunities by many different stakeholders.

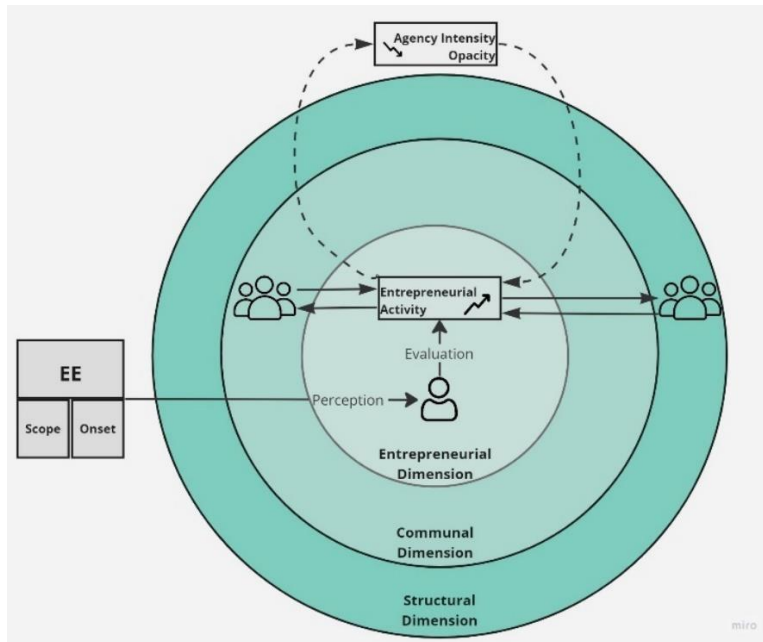
Lastly, attention to enabling mechanisms was given in our study. Mechanisms specify the cause-effect relationship between EEs and the enablement of individual ventures (Davidsson et al., 2020; Kimjeon & Davidsson, 2021). In *Table 10*, we illustrate how our participants were subject to the nine mechanisms mentioned in Davidsson et al. (2020). The organizational context affected which mechanisms were actually presented. Interestingly, we noticed that the majority of our participants could describe the presence of two or more mechanisms that led to entrepreneurial enablement. This is important, as mechanisms can interact with one another to produce complementary benefits (Davidsson et al., 2020; Chen et al., 2020). Specifically, we realized that psychosocial mechanisms (i.e., uncertainty reduction and legitimation) provided the foundation for other mechanisms to interact with the venture. This can be attributed to the community perspective within sustainable ventures, as the perception, adoption, and retention of sustainable opportunities to address GCs changes ways in which resources, services, and business practices were utilized. In other words, community involvement and acceptance of sustainable opportunities created efficient systems where resources, customer markets, and business models were optimally integrated to align with organizational visions.

Table 10: Overview of EE Mechanisms (Davidsson et al., 2020)

Mechanisms	Definition	Illustrative Quotes
Combination	Coupling with external resources or artifacts to provide functionality	"Then you have your community habitat, which can have a butchery fridges and then you are creating employment for your other children and other members. This is this is how you should think it: you should be in the production cycle, then in processing, and marketing. That becomes a complete joint venture. (ID02)"
Compression	Reduction in the amount of time required to perform an activity	"Most importantly, it's about community members, genuinely engaging in their community with a culture of respect. I want to see volunteer days, and I want to see you taking control. So as a direct result of that, I don't have to micromanage on the ground. (ID13)"
Conservation	Reduction in the amount of resources required to perform an activity	"They were still using a very old traditional method of agriculture and farming, which leads to lower productivity and high cost, high inefficiencies and of course, increased poverty. That did really open my eyes to what we do in terms of technology, to be able to integrate smaller farmers, and the rural people in general, into the digital economy. (ID01)"
Enclosing	Increase in a venture's ability to capture the value it creates and the loyalty of buyers	"Some of the communities are immediately accepting, based on recommendations of the other community leader. There's referral also from one community to the next community, in terms of building something within communities, and definitely women engaged for the community. [...] So the people or the background also helped us to settle in gradually. (ID09)"
Expansion	Increase in the amount of a resource that is accessible Increase in demand at a given price and given functionality	"This one lady that is willing to support us, she's going to give us money that we can use for a period of time without reimbursing. And then after that period of time we will start reimbursing slowly until we get rid of the debt. And she's not asking for interest. (ID12)"
Generation	Allowing the creation of new artifacts (devices, functionalities, business models)	"By 2054, most of systems for agriculture in the world will be. [...] Still, a huge majority of the farming is done by rain fed methods, which means that you don't have any irrigation systems, which further impacts you know, the results of the farmers, it becomes a guessing game. And this is where we have been trying to sort to make it much more reliable, to not expose the farmers towards the weather risks that are otherwise there. And of course, this becomes even more relevant with climate change. (ID17)"
Legitimation	Increase in the legality or psychological/sociocultural acceptability of the venture or its offerings	"I think the environment is quite positive for supporting startups and small businesses, both at the micro and macro level. We have a sitting governor, previously, he introduced the what you call the startup bill in Parliament to ensure that startups are treated differently from established business. (ID07)"
Substitution	Replacement of one resource with another Increase in demand that is due to making a focal venture's market offerings [perceived as] more needed/attractive (positive substitution) or to making competitive offerings perceived as less needed or attractive (negative substitution)	"We are basically mobilising or aggregating or collecting whole lot of waste [...] And you see them as substitutes for our animal feed production and that's a huge impact on environment. (ID01)" most parts of the world pretty much depend on Ukraine for fertilizer. And we are in the fertilizer business, [...] that's also increased demand for our products, when the war started. (ID05)"
Uncertainty Reduction	Reduction in the perceived uncertainty of any business decisions of buyers or sellers	"So we had to educate people, we had to put so much energy in educating people that we can create something. Yes, our product was not as good at the time. And so we had to really ask customers, or the people to actually give us the chance and, and invest in us, and so that we can continue to grow. (ID10)"

The degree to which a mechanism is obvious to identify (opacity), and the extent of resources required to activate a mechanism (agency-intensity) characterize the dimensions in which a mechanism may be present in organizations (Davidsson et al., 2020; Kimjeon & Davidsson, 2021). Our findings indicate that the development of entrepreneurial ecosystems reduces both these characteristics, illustrated in figure 2. By engaging with communities and realizing ventures through knowledge dissemination, entrepreneurs empowered further individuals to recognize the gravity of GCs and take sustainable actions. Thus, the identification of mechanisms to sustain entrepreneurial activity became intelligible and, through support from an ecosystem, the pressure on agents to act in isolation lessened. This echoes previous studies (cf. Chalmers et al., 2019; Sine & Lee, 2009), indicating that the establishment of entrepreneurial ecosystems can reduce the opacity and agency-intensity of mechanisms within and across organizations, further enhancing the potential for entrepreneurial creation in similar spheres.

Figure 3: Interplay between EE and Sustainable Entrepreneurial Ecosystems



Our overall findings corroborate much of what has been established in previous studies on the EE Framework. In regards to GCs, we empirically investigated the types of enablement that can emerge and concluded that its complexity causes the emergence of various macro-institutional enablers: in some cases, GCs were associated with different types of enablement. In regards to sustainable entrepreneurs, we note that these agents respond to GCs in very similar methods when compared to conventional entrepreneurs. The mechanisms that were identified as inherent to conventional values also translated to sustainable entrepreneurs.

However, sustainable entrepreneurs approached their venture with the community at heart. Here we noted that community development makes mechanisms less opaque and puts less intensity on the agent to enact a given mechanism. Moreover, instilling sustainable beliefs in communities extended the temporal scope, which then gave rise to further expansions of spatial, sectoral, and socio-demographic scopes. We therefore pose that an understanding of sustainable entrepreneurial ecosystems is valuable to understanding how entrepreneurs emerge when an external enabler enters their direct environment.

5.2. Contribution to Sustainable Entrepreneurial Ecosystems

In our investigation of sustainable entrepreneurial ecosystems, we identified several concepts applicable from entrepreneurial ecosystems, along with contrasting perspectives and new insights that may be specifically tied to sustainable entrepreneurial ecosystems. Foremost, several researchers identified core domains that define entrepreneurial ecosystems (cf. Isenberg, 2010; Stam, 2015; Spigel, 2017; Wurth et al., 2022). Culture, education, governance, and resource accessibility were pre-established by the aforementioned scholars; our identification of these themes as integral to ecosystems is unsurprising. However, previous studies have identified these themes as structural foundations that encourage entrepreneurial activities (Isenberg, 2016; Stam, 2015; Spigel, 2017). Our study, however, approaches these themes as agent-centric, and the perception of ecosystem pillars introduces an individual dimension. Moreover, in SSA, where structural foundations were inadequate for fostering sustainable entrepreneurship, we were able to assess how the non-existence of structural ecosystem pillars can still foster entrepreneurial activities through different methods.

Extending on these matters, we realized how the perception of sustainable entrepreneurship in different ecosystem pillars influenced the development of sustainable ecosystems. We identified that cultural perceptions of sustainability affect the creation of entrepreneurial activity. Similarly, educational infrastructure, resource accessibility, and governance that forgo attention on sustainability hinders structural developments towards sustainability. The introduction of sustainable development as an ecosystem pillar highlights how the development of sustainable entrepreneurial ecosystems is conditional to concrete acts that incorporate sustainable potential. By doing so, we address a gap in ecosystem theory, namely that little research is focused on sustainability dimensions in ecosystems (Bischoff & Volkmann, 2018; Neumeyer & Santos, 2018; Volkmann et al., 2019).

Furthermore, ecosystems have been illustrated as hierarchal (Spigel, 2017), while our layout of themes across different dimensions approaches an interrelated and holistic overview. While this study did not extend to discussing how ecosystem pillars are interrelated, we noted that the development of one pillar was dependent on the development of others. For instance, the development of educational infrastructure depended on governmental action, while educational infrastructure itself affected the perception of sustainable development. This study did however provide the basis to assess

ecosystem pillars as inherent to different layers of exposure. All of our themes were present in individual ventures, local communities, and structural systems, and the perception of one theme, for example culture, differed vastly in the individual dimension when compared to the structural dimension. By highlighting how individual, communal, and structural positions interact in a larger ecosystem, we address the lack of research on interrelated elements that lead to entrepreneurial production (Alvedalen & Boschma, 2017; Bischoff & Volkmann, 2018).

Our findings also consider the redefinition of productive entrepreneurship to be of value. Wurth et al. (2022) allude to the fact that productive entrepreneurship should include social and ecological value creation, or other activities that are regarded to be valuable for society. By investigating sustainable entrepreneurship, we confirm that, in certain contexts, the development of economic, social, and environmental value is what makes entrepreneurial activities ‘productive.’ Since entrepreneurs can transform large-scale socioeconomic structures towards sustainability (Uddin et al., 2015), we pose that the productivity of sustainable entrepreneurial ecosystems lies with interconnected approach to solving sustainability issues; the legitimacy may flow over to reconstruct conventional entrepreneurial ecosystems into being more sustainable.

Lastly, we introduce the idea of sustainable entrepreneurs as ecosystem builders. Efforts to stimulate entrepreneurial activities require bottom-up approaches that reshape ecosystem conditions (Mason & Brown, 2014). Additionally, stakeholder support and collaboration are key to promote sustainable entrepreneurship and the construction of Sustainable Entrepreneurial Ecosystems (Theodoraki et al., 2022). Our findings indicate that entrepreneurs initiated cooperation with stakeholders to build ecosystems. With a lack of structural support encouraging sustainable entrepreneurial ecosystems, our participants emancipated others around them to adopt sustainable practices and streamline resources and knowledge. Thus, the entrepreneurs and their close associates innately shaped the investigated entrepreneurial ecosystems in SSA. Secondly, entrepreneurial ecosystems require context-specific inquiries (Cavallo et al., 2018; Stam & Van de Ven, 2019; Volkmann et al., 2019; Wurth et al., 2022), and in this study we identified that entrepreneurs within SSA shaped entrepreneurial ecosystems to fit the pressing needs in the region. Thus, entrepreneurial ecosystems have the potential to be built at the individual level to fit context-specific requirements, and support from structural actors can follow once the ecosystem stabilizes.

In comparison to existing literature, our study reconceptualizes and extends on core concepts significantly. For domains that inspire entrepreneurial ecosystem development, we identified similar themes to what other scholars have brought forth (Isenberg, 2010; Stam, 2015; Spigel, 2017; Wurth et al., 2022). However, we reconceptualize these matters through a sustainable lens, introduce agent-centricity as a core perspective to reshape the understanding of ecosystem pillars, and highlight the interrelation between different levels of ecosystems and their inclusion of aggregate-level themes. Moreover, we extend on the definition of productive entrepreneurship by emphasizing the need to include social and environmental aspects as productivity, especially in sustainable entrepreneurial ecosystems. Lastly, we present the notion of agent-centricity within ecosystems by highlighting the potential for entrepreneurs to be ecosystem builders. Adopting a bottom-up approach that incorporates various local stakeholders can compensate for the lack of a structural foundation and allows for the formation of ecosystems in context-specific environments. Knowing that agents can be instigators of ecosystems, we consider the role of sustainable entrepreneurs especially important in sustainable entrepreneurial ecosystems.

5.3. Contributions to Sustainable Entrepreneurship

Our empirics stressed the importance of understanding sustainable entrepreneurship in the Sub-Saharan context. Current research highlights how the identification of sustainability challenges as a high-potential economic opportunity, the strategic pursuit of uniting social, economic and environmental entrepreneurial goals, or the preservation of the present and/or future welfare of society can instigate sustainable entrepreneurship (Shepherd and Patzelt, 2011). After further investigation of our participants, we noted that the current definitions of sustainable entrepreneurship do not align with the expressions captured in our study for various reasons. The sustainable entrepreneurial profile found in our participants was one characterized by intrinsic motivations, necessity entrepreneurship, and an implicit acknowledgement to be a sustainable entrepreneur.

The intrinsic motivation of entrepreneurs was multi-faceted. Several of our participants viewed sustainability as a passion. They also expressed that frustration with institutional structures led to entrepreneurial creation. While the former is, to some extent, a requisite for any sustainable entrepreneur, the latter echoes sentiments held by several

scholars (Sine & Lee, 2009; Welter & Smallbone, 2010), who indicate that sustainable entrepreneurship can form as a solution for institutional holes. Given the Sub-Saharan context, we identify that sustainable entrepreneurs use their intrinsic beliefs on sustainability to address challenges that are not attended to by institutional structures.

Moreover, a high number of our participants indicated that their venture grew out of necessity. Since no individual or organization took action to solve challenges, our participants took the initiative to do so themselves. Necessity entrepreneurship is generally concerned with entrepreneurs having no other alternative to enter the labor market (Block et al., 2014). Our entrepreneurs did not exemplify this, as several left positions in established organizations to create their own sustainable ventures. Thus, the definition of what can be considered necessity entrepreneurship comes into question.

We also noticed that our participants were hesitant, or unaware, of their involvement in sustainable entrepreneurship. Sustainable entrepreneurs are characterized by their ability to identify and unite a vast range of institutional challenges (Thompson et al, 2011). All our entrepreneurs fit this description, as they all identified GCs as a catalyst for sustainable entrepreneurship. However, they were unlikely to name themselves as sustainable entrepreneurs. Rather, many entrepreneurs referred to themselves as social entrepreneurs. Thus, the boundaries between different forms of sustainable entrepreneurship become blurry when self-identification is used as a method for defining sustainable entrepreneurship.

Lastly, we identified that all our entrepreneurs were driven to include and empower communities, by promoting local autonomy and localized working environments. Interestingly, social entrepreneurs are known to shift operational functions to alternative organizational structures and embed an altruistic motivation to help others over the pursuit of self-interest (Thompson et al, 2011). Thus, all of our participants were, by definition, social entrepreneurs. The pursuit of environmental goals that included social and economic elements is what classified them as sustainable entrepreneurs. Therefore, we can see an intersection between sustainable entrepreneurship as a pursuit for current and future welfare, and the strategic creation of interconnected sustainability goals (Shepherd & Patzelt, 2011). This further emphasizes that current definitions work in isolation and do not capture a holistic overview of sustainable entrepreneurship. We therefore propose that sustainable entrepreneurship be defined as:

DISCUSSION

Entrepreneurial agents who, unbeknownst or not, are intrinsically motivated to fill crucial roles that interrelate sustainability goals in their strategic pursuit of promoting the welfare of current and future generations for local, national, or global communities.

This definition carries several implications. First, by acknowledging that entrepreneurs can be unaware of their role in sustainable development, we extend the demographic to which this label may apply. Secondly, the introduction of intrinsic motivations captures that sustainable entrepreneurs are distinguished from conventional entrepreneurs because of their built-in sustainable belief systems. Thirdly, the emphasis on crucial roles argues that sustainable entrepreneurs are necessity entrepreneurs by default, trying to solve cataclysmic challenges that need attention. Fourthly, by combining two established definitions of sustainable entrepreneurship, we provide a cohesive look on the strategic behavior of sustainable entrepreneurs, and the motivation to enact such behavior. Lastly, the inclusion of different scopes expresses that sustainable entrepreneurship can vary in impact but works in unison with community conservation and development.

6. Conclusion

The contents of this chapter present the overall findings, contributions, and answers to the research question. First, we discuss how our research study has addressed previous gaps in the literature and how the study answers the overall research question. Moreover, we summarize our theoretical contributions to each stream of literature, and discuss practical implications for entrepreneurs, community stakeholders, and policymakers. Then, we reflect on the strengths and limitations of this study, and finally suggest new areas of research that may enrich the theoretical and empirical understanding of sustainable development.

The purpose of this research was to identify sustainable entrepreneurial activities, responsive to Grand Challenges, in Sub Saharan Africa, and investigate how ecosystems were utilized to enrich entrepreneurial activity. By collecting data from various countries, we were able to generalize dimensions of ecosystems in SSA and identify their influence on sustainable entrepreneurship.

We positioned our findings to answer our research question: “*How do sustainable entrepreneurs interact with their ecosystems, to enable venture activities that target Grand Challenges in Sub-Saharan Africa?*” We could therefore make empirical inquiries that carried practical implications for Sub-Saharan entrepreneurs, and theoretical inquiries that contributed to extant literature.

We identified that GCs were catalysts for entrepreneurial activity. The type of entrepreneurial activity depended on how the GC enabled different facets of the macro-environment. For instance, climate volatility gave rise to cultural, environmental, and technological enablers. More importantly, we noticed that, given weak institutional systems, entrepreneurs built enabling ecosystems from the ground up. By interacting with ecosystem actors, entrepreneurs were able to instill sustainable beliefs, legitimize sustainable entrepreneurial activities, and fill institutional holes.

Specifically, all our participants were inseparable from community development activities. This led to the enabling scope of GCs expanding across spatial, sectoral, temporal, and socio-demographic ranges. Moreover, community interactions helped entrepreneurs reduce the opacity and agency-intensity of enabling mechanisms. By involving community stakeholders, entrepreneurs were able to generate new entrepreneurial resources that made acting on GCs more transparent and distributed entrepreneurial resources across their network to ease the burden of acting in isolation. These interactions were transitive, as the development of entrepreneurial activities within

communities empowered others to act on GCs, due to the reduction of opacity and agency-intensity.

Furthermore, we noticed that entrepreneurial interactions with ecosystems were multi-layered. An entrepreneurial dimension highlighted the utilization of ecosystems within organizations. The communal dimension discussed the appearance of local involvement and its consequent enrichment of entrepreneurial activities. The structural layer concerned macro-institutional support in enabling entrepreneurs to act on sustainable activities. In SSA, the core influences on entrepreneurial activities came from the entrepreneurial and communal dimensions. The lack of institutional support hindered entrepreneurial activity to some extent but emphasized the need to interact with organizational and communal actors.

Lastly, we noticed that the role of sustainable entrepreneurship is different in SSA. Specifically, the inherent qualities that make a sustainable entrepreneur were inconsistent with current understandings of sustainable entrepreneurship. Inherent passion, the need to act on GCs, and lack of commitment to a sustainable entrepreneurship label characterized our participants. Thus, the difference in understandings on sustainable entrepreneurship may have changed how entrepreneurs utilize their ecosystems to act on GCs.

6.1. Theoretical Contributions

Our study connected several streams of entrepreneurship literature and extended or reconceptualized current understandings of sustainable entrepreneurship within literature. We extended on the EE Framework by highlighting how enabling characteristics (scope and onset) and mechanisms characteristics (opacity and agency-intensity) change when introduced to entrepreneurial ecosystems. The variance of these characteristics was subject to community pillars and enlarged the overall scope of GCs and enablers and reduced the difficulty on introducing mechanisms to entrepreneurial activity. Moreover, by introducing sustainable ecosystems into the EE Framework, we cover several theoretical gaps, namely the lack of attention to the systematic dynamics of external enablers (Davidsson et al., 2020), and the need for research on different cohorts of entrepreneurs responding to external enablers (Manochoa et al., 2021). By perceiving ecosystems from an entrepreneurial perspective, we also introduce agent-centricity to the Framework.

For entrepreneurial ecosystems, we empirically contribute to pre-established understanding of entrepreneurial ecosystems, mainly by identifying and corroborating previously discussed pillars of sustainability (Isenberg, 2016; Stam, 2015; Spiegel, 2017). However, by introducing different dimensions within ecosystems, each with their own unique characteristics, we address the lack of research on interrelations between different ecosystem agents (Alvedalen & Boschma, 2017; Bischoff & Volkmann, 2018). By specifically focusing on sustainable entrepreneurs, we cover new insights that fill the lack of attention to sustainability dimensions in ecosystems (Bischoff & Volkmann, 2018; Neumeyer & Santos, 2018; Volkmann et al., 2019). We also introduce the notion of sustainable entrepreneurs as ecosystem-builders and highlight how entrepreneurial agents can control the establishment of sustainable ecosystems in contexts where institutional actors fail to promote sustainability as a core tenet for entrepreneurial creation.

We also reconceptualize the idea of sustainable entrepreneurship. Specifically, we noted that entrepreneurship by necessity, as the only means entering the labor market (Block et al., 2014), is outdated and should consider that responding to sustainability is often an act of necessity. Similarly, our participants did not necessarily identify as sustainable entrepreneurs, indicating that unplanned sustainable entrepreneurs may be included in this label. Lastly, we assessed the isolation of different characteristics of sustainable entrepreneurship (Shepherd & Patzelt, 2011), and concluded that a more holistic representation of sustainable entrepreneurship should be introduced. Thus, our theoretical contribution to sustainable entrepreneurship lies with the revision of current literature and introduction of a new definition that applies to a more tailored group of implicit and necessity entrepreneurs.

6.2. Practical Implications

The findings of this study carry several implications for practitioners and policymakers. Specifically, the implications relate to the development of sustainable entrepreneurial ecosystems. By identifying three dimensions of sustainable entrepreneurial ecosystems, we were able to find value for start-up ventures, community stakeholders, and institutional actors.

For start-up ventures, our findings provide necessary information on utilizing ecosystems to act on external enablers. In the entrepreneurial dimension, we signify that entrepreneurs should be reflective of their organizational capabilities as well as their

CONCLUSION

personal background. Uncovering personal motivations can focus the entrepreneurial vision to pursue personal passions, while assessing the current capabilities of organizational resources allows firms to position themselves within institutional markets and establish steps to realize ventures. Moreover, we indicated that entrepreneurs could be ecosystem builders. Thus, entrepreneurs can dedicate personal resources and motivations to enrich the development of ecosystems and serve as role models to empower those around them with similar intentions. Lastly, by introducing a new definition of sustainable entrepreneurship, we believe that more entrepreneurs can identify with sustainable entrepreneurship and market their ventures as such to increase their exposure to sustainable stakeholders.

Community stakeholders can use our findings to serve as an intermediary between entrepreneurial ventures and institutional actors. By accepting entrepreneurial initiatives and reshaping institutional systems, community stakeholders can decrease the distance between individual and institutional agents and interact with multiple influences to enrich sustainable development. Moreover, we exemplified that community support improves productivity in entrepreneurial ventures and indicated that this often leads to a reciprocal relationship within the community. Thus, we believe that our findings can increase the adoptability of sustainability in communities and pose that community stakeholders should actively work with sustainable ventures to develop sustainable communities and promote entrepreneurial spirits that can solve pressing challenges in local contexts.

Lastly, policymakers may find value in our study to position sustainable entrepreneurial ecosystems as a tool for economic development. Policymakers can either improve current institutional systems, reshape the institutional environment to include sustainable entrepreneurship, or allow further access of resources to communities and entrepreneurs, to build ecosystems through the structural systems in SSA. Another way policymakers could improve the potential for entrepreneurial ecosystems would be to embrace the ecosystem builder role of entrepreneurs. Here, we expect policymakers to formulate institutional systems to shape sustainable and entrepreneurial cultures, but avoid economic interventionism to allow sustainable entrepreneurship to emerge naturally. Regardless of whether policymaker opt for top-down or bottom-up approach to ecosystem development, this study shows the value of sustainable entrepreneurial ecosystems to tackle the pressing challenges in SSA, and policy-makers are positioned to promote agents who aim to solve these challenges.

6.3. Strengths and Limitations

Any study is subject to limitations, this one notwithstanding. By critically reflecting on our thesis study, we identified three core limitations through which this study may have been hindered. Simultaneously, we pose that several strengths limited the impact of these limitations and reassured that the study maintained valuable.

Firstly, we pose that a core limitation in this study is the methods of data collection. As our study focused on an interview-based design to collect information on sustainable entrepreneurs in SSA, we were unable to provide intimate insights into specific cases. Similarly, through qualitative methods, we were able to present our findings conceptually, whereas the inclusion of quantitative methods would have increased the overall credibility and add multiple perspectives that could uncover deviant dimensions or confirm findings (Easterby-Smith et al., 2015). However, there have been few studies on GCs in developing economies (Jamali et al., 2021), investigations on sustainability in ecosystems ((Bischoff & Volkmann, 2018; Neumeyer & Santos, 2018; Volkmann et al., 2019), or the enablement of specific entrepreneurial cohorts (Manochoa et al., 2021). Thus, we believe that by conceptualizing interrelations of external enablers and ecosystems, we introduce the option to advance our study through new methods.

Secondly, by focusing on sustainable entrepreneurs, we chose a limited sample in a highly specific context. The findings in this study may not carry over to other cohorts of entrepreneurs. Different cohorts of entrepreneurs are concerned with different objectives, so the identified perceptions may not be relevant to, for example, digital entrepreneurs. However, entrepreneurs can transition structural systems to include sustainability (Uddin et al., 2015). Therefore, we consider the role of sustainable entrepreneurship to be evident as a macro-solution and recommend that our findings should be, to some extent, indicative of all future ventures, if we are to change our business practices to incorporate the welfare of current and future societies.

Lastly, the Sub-Saharan context is highly unique and is characterized by highly complex challenges, (Institute for Economics and Peace, 2022) and a high potential for entrepreneurial solutions (Leke & Signé, 2019). As we perceived this context from an entrepreneurial perspective, we acknowledge that our findings may not transfer to other regions. Specifically, cultural sentiments may be highly relevant for SSA, but could drastically change in other regions. However, as our findings corroborate previously identified ecosystem pillars (Isenberg, 2016; Stam, 2015; Spigel, 2017); we believe that

the presence of these pillars is global. That said, our findings may only be applicable to similar institutions, and are therefore limited to work within similar contexts.

6.4. Areas of Future Research

This study opened up new opportunities for future research to emerge. By linking sustainable entrepreneurial ecosystems to external enablers, we indicate that further studies should investigate this relationship. Moreover, our introduction of ecosystem builders deserves further attention, especially in the context of sustainability. Lastly, our findings could be tested in new geographic contexts, both with similar and contrary characteristics, as to determine the verifiability of our existing findings and generate unanticipated insights into new ecosystem pillars.

For the interrelation between external enablers and entrepreneurial ecosystems, we recommend future researchers to quantifiably assess the impact an external enabler has on the formation of ecosystems, and how ecosystems reduce the opacity and agency-intensity of enabling mechanisms. Moreover, we suggest that the interplay between established dimensions is explained, as well as the interplay between ecosystem pillars, as to enhance the ability for practitioners and policymakers to prioritize the promotion of certain elements in entrepreneurial ecosystems.

Moreover, we have introduced that entrepreneurs can be ecosystem builders in areas where institutional systems hinder ecosystem development. Since we did not anticipate this finding, we propose that further research investigates the role of entrepreneurs as ecosystem builders, to clarify the relevance of bottom-up approaches in entrepreneurial ecosystems. Since sustainable entrepreneurs can cover institutional gaps (Sine & Lee, 2009; Welter & Smallbone, 2010), we believe that sustainable entrepreneurial ecosystems may be especially suited for their bottom-up approach, and therefore suggest that researchers continue our investigation into sustainable entrepreneurial ecosystems through the perspective of ecosystem builders.

Lastly, our findings are empirically driven and representative of the Sub-Saharan context. Meaning, our discovery of ecosystem pillars and dimensions may be positioned differently in other regions. We therefore advise future researchers to test our findings in similar and contrary contexts. By conducting case studies or exploratory research in similar institutional regions, our findings can be corroborated, opposed, or elaborated on. The exploration of our findings in strong institutional systems that value both

CONCLUSION

sustainability and entrepreneurship can uncover vastly different results or exemplify that our findings are core to the success of sustainable development. Addressing sustainable development in different contexts may prove to generate the framework needed to ensure the survival and welfare of current and future societies at a global scale.

Reference list

- Albert, K., Brundage, J. S., Sweet, P., & Vandenberghe, F. (2020). Towards a critical realist epistemology? *Journal for the Theory of Social Behaviour*, 50(3), 357–372.
- Alvarez, S. A., & Barney, J. B. (2007). Discovery and creation: alternative theories of entrepreneurial action. *Strategic Entrepreneurship Journal*, 1(1-2), 11–26.
- Alvarez, S. A., Barney, J. B., & Anderson, P. (2013). Forming and Exploiting Opportunities: The Implications of Discovery and Creation Processes for Entrepreneurial and Organizational Research. *Organization Science*, 24(1), 301–317.
- Alvedalen, J., & Boschma, R. (2017). A critical review of entrepreneurial ecosystems research: towards a future research agenda. *European Planning Studies*, 25(6), 887–903.
- Anderson, A. R. (1998). Cultivating the Garden of Eden: environmental entrepreneuring. *Journal of Organizational Change Management*, 11(2), 135–144.
- Ashoka. (2023). *Find Ashoka Fellows | Ashoka | Everyone a Changemaker*. [www.ashoka.org. https://www.ashoka.org/en-us/our-network/ashoka-fellows/search?search_term=sustainable&field_region%5B%5D=1459](https://www.ashoka.org/en-us/our-network/ashoka-fellows/search?search_term=sustainable&field_region%5B%5D=1459)
- Audretsch, D. B., Eichler, G. M., & Schwarz, E. J. (2021). Emerging needs of social innovators and social innovation ecosystems. *International Entrepreneurship and Management Journal*, 18(1), 217–254.
- Babbie, E. R. (2020). *Practice of social research* (15th ed., p. 18). Cengage Learning.
- Bell, E., & Bryman, A. (2007). The Ethics of Management Research: an Exploratory Content Analysis. *British Journal of Management*, 18(1), 63–77.
- Belz, F. M., & Binder, J. K. (2015). Sustainable Entrepreneurship: A Convergent Process Model. *Business Strategy and the Environment*, 26(1), 1–17.
- Bennett, D. L. (2019a). Local economic freedom and creative destruction in America. *Small Business Economics*.
- Bennett, D. L. (2019b). Infrastructure investments and entrepreneurial dynamism in the U.S. *Journal of Business Venturing*, 34(5), 105907.
- Bergman, M. (2008). *Advances in Mixed Methods Research*. SAGE Publications Ltd.
- Bhaskar, R. (1998). *The possibility of naturalism: a philosophical critique of contemporary human sciences*. Routledge.
- Bhaskar, R. (2008). *A Realist Theory of Science*. Routledge.
- Bhaskar, R. (2009). *Scientific Realism and Human Emancipation*. Routledge.

- Bhaskar, R. (2011). *Reclaiming reality: a critical introduction to contemporary philosophy*. Routledge.
- Bischoff, K., & Volkmann, C. K. (2018). Stakeholder support for sustainable entrepreneurship - a framework of sustainable entrepreneurial ecosystems. *International Journal of Entrepreneurial Venturing*, 10(2), 172.
- Block, J. H., Kohn, K., Miller, D., & Ullrich, K. (2014). Necessity entrepreneurship and competitive strategy. *Small Business Economics*, 44(1), 37–54.
- Boyatzis, R. E. (1998). *Transforming Qualitative Information: Thematic Analysis and Code Development*. Sage Publications.
- Braun, V., & Clarke, V. (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
- Bylund, P. L., & McCaffrey, M. (2017). A theory of entrepreneurship and institutional uncertainty. *Journal of Business Venturing*, 32(5), 461–475.
- Cavallo, A., Ghezzi, A., & Balocco, R. (2018). Entrepreneurial ecosystem research: present debates and future directions. *International Entrepreneurship and Management Journal*, 15(4), 1291–1321.
- Chalmers, D., MacKenzie, N. G., & Carter, S. (2020). Artificial Intelligence and Entrepreneurship: Implications for Venture Creation in the Fourth Industrial Revolution. *Entrepreneurship Theory and Practice*, 45(5), 104225872093458.
- Chalmers, D., Matthews, R., & Hyslop, A. (2019). Blockchain as an external enabler of new venture ideas: Digital entrepreneurs and the disintermediation of the global music industry. *Journal of Business Research*.
- Chen, J. J., Cui, C., Hunt, R. A., & Li, L. S.-Z. (2020). External enablement of new venture creation: An exploratory, query-driven assessment of China's high-speed rail expansion. *Journal of Business Venturing*, 35(6), 106046.
- Choi, N., & Majumdar, S. (2014). Social entrepreneurship as an essentially contested concept: Opening a new avenue for systematic future research. *Journal of Business Venturing*, 29(3), 363–376.
- Cohen, B. (2005). Sustainable valley entrepreneurial ecosystems. *Business Strategy and the Environment*, 15(1), 1–14.
- Crenshaw, K. (1991). Mapping the Margins: Intersectionality, Identity Politics, and Violence against Women of Color. *Stanford Law Review*, 43(6), 1241–1299.

- Davidsson, P. (2015). Entrepreneurial opportunities and the entrepreneurship nexus: A re-conceptualization. *Journal of Business Venturing*, 30(5), 674–695.
- Davidsson, P., Recker, J., & von Briel, F. (2020). External enablement of new venture creation: A framework. *Academy of Management Perspectives*, 34(3).
- Davidsson, P., Recker, J., & von Briel, F. (2021). COVID-19 as External Enabler of entrepreneurship practice and research. *BRQ Business Research Quarterly*, 24(3), 234094442110089.
- Dean, T. J., & McMullen, J. S. (2007). Toward a theory of sustainable entrepreneurship: Reducing environmental degradation through entrepreneurial action. *Journal of Business Venturing*, 22(1), 50–76.
- Decoteau, C. L. (2016). The AART of Ethnography: A Critical Realist Explanatory Research Model. *Journal for the Theory of Social Behaviour*, 47(1), 58–82.
- Dimov, D. (2011). Grappling With the Unbearable Elusiveness of Entrepreneurial Opportunities. *Entrepreneurship Theory and Practice*, 35(1), 57–81.
- Dubois, A., & Gadde, L.-E. (2002). Systematic combining: an abductive approach to case research. *Journal of Business Research*, 55(7), 553–560.
- Easterby-Smith, M., Thorpe, R., & Jackson, P. (2015). *Management and business research* (5th ed.). Sage.
- Edwards, P. K., O'mahoney, J., & Vincent, S. (2014). *Studying organizations using critical realism: a practical guide*. Oxford University Press.
- Eisenhardt, K. M. (1989). Building Theories from Case Study Research. *The Academy of Management Review*, 14(4), 532–550.
- Eisenhardt, K. M. (2021). What is the Eisenhardt Method, really? *Strategic Organization*, 19(1), 147–160.
- Eisenhardt, K. M., & Graebner, M. E. (2007). Theory Building From Cases: Opportunities And Challenges. *Academy of Management Journal*, 50(1), 25–32.
- Eisenhardt, K. M., Graebner, M. E., & Sonenshein, S. (2016). Grand Challenges and Inductive Methods: Rigor without Rigor Mortis. *Academy of Management Journal*, 59(4), 1113–1123.
- Ely, M., Vinz, R., Downing, M., & Anzul, M. (1997). *On writing qualitative research: living by words*. Falmer Press.
- European Commission. (2023). *Sub-Saharan Africa*. International-Partnerships.ec.europa.eu. https://international-partnerships.ec.europa.eu/countries/sub-saharan-africa_en

- Fichter, K., Fuad-Luke, A., Hjelm, O., Klofsten, M., Backman, M., Bergset, L., Bienkowska, D., Clausen, J., Geier, J., Hirscher, A.L., Kanda, W., Kuisma, M. (2016). SHIFTing the Support of Entrepreneurship in Eco-Innovation. Summary of results and recommendations from the Eco-Innovaera project SHIFT. Berlin, Helsinki, Linköping: SHIFT.
- Fletcher, A. J. (2016). Applying critical realism in qualitative research: Methodology meets method. *International Journal of Social Research Methodology*, 20(2), 181–194.
- George, G., Howard-Grenville, J., Joshi, A., & Tihanyi, L. (2016). Understanding and Tackling Societal Grand Challenges through Management Research. *Academy of Management Journal*, 59(6), 1880–1895.
- Gorski, P. S. (2013). “What is Critical Realism? And Why Should You Care?” *Contemporary Sociology: A Journal of Reviews*, 42(5), 658–670.
- Guba, E. G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *ECTJ*, 29(2), 75–91.
- Guba, E. G., & Lincoln, Y. S. (1994). Competing Paradigms in Qualitative Research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105–117). SAGE.
- Heron, J. (1996). *Co-operative inquiry: research into the human condition*. Sage.
- Hinderer, S., & Kuckertz, A. (2022). The bioeconomy transformation as an external enabler of sustainable entrepreneurship. *Business Strategy and the Environment*.
- Hockerts, K., & Wüstenhagen, R. (2010). Greening Goliaths versus emerging Davids — Theorizing about the role of incumbents and new entrants in sustainable entrepreneurship. *Journal of Business Venturing*, 25(5), 481–492.
- Howard-Grenville, J., Davis, J., Dyllick, T., Joshi, A., Miller, C., Thau, S., & Tsui, A. S. (2017). Sustainable Development for a Better World: Contributions of Leadership, Management and Organizations. *Academy of Management Discoveries*, 3(1), 107–110.
- Hu, X., Marlow, S., Zimmermann, A., Martin, L., & Frank, R. (2019). Understanding Opportunities in Social Entrepreneurship: A Critical Realist Abstraction. *Entrepreneurship Theory and Practice*, 104225871987963.
- Hunt, R. A., & Fund, B. R. (2016). Intergenerational Fairness and the Crowding Out Effects of Well-Intended Environmental Policies. *Journal of Management Studies*, 53(5), 878–910.

- Institute for Economics & Peace. (2022). *Ecological Threat Report 2022: Analysing Ecological Threats, Resilience & Peace*.
- IPCC. (2021). *Climate Change 2021 The Physical Science Basis*.
- Isenberg, D. (2010, June). *The Big Idea: How to Start an Entrepreneurial Revolution*. Harvard Business Review.
- Isenberg, D. (2011, May 25). *Introducing the Entrepreneurship Ecosystem: Four Defining Characteristics*. Forbes.
- Isenberg, D. (2016). Applying the Ecosystem Metaphor to Entrepreneurship: Uses and Abuses. *SSRN Electronic Journal*.
- Jamali, D., Leigh, J., Samara, G., & Barkemeyer, R. (2021). Grand challenges in developing countries: Context, relationships, and logics. *Business Ethics, the Environment & Responsibility*, 30(S1), 1–4.
- Kimjeon, J., & Davidsson, P. (2021). External Enablers of Entrepreneurship: A Review and Agenda for Accumulation of Strategically Actionable Knowledge. *Entrepreneurship Theory and Practice*, 46(3), 643–687.
- Kirzner, I. M. (1973). Competition and Entrepreneurship. *University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship*.
- Kuckertz, A., & Wagner, M. (2010). The influence of sustainability orientation on entrepreneurial intentions — Investigating the role of business experience. *Journal of Business Venturing*, 25(5), 524–539.
- Lawani, A. (2020). Critical realism: What You Should Know and How to Apply It. *Qualitative Research Journal*, 21(3), 320–333.
- Leke, A., & Signé, L. (2019). *Africa's Untapped Business Potential: Countries, sectors, and strategies* (pp. 77–95). Brookings.
- Lenox, M., & York, J. G. (2012). Environmental Entrepreneurship. In *Oxford Handbooks Online*. Oxford University Press.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. Sage Publications.
- Lynas, M., Houlton, B. Z., & Perry, S. (2021). Greater than 99% consensus on human caused climate change in the peer-reviewed scientific literature. *Environmental Research Letters*, 16(11), 114005.
- Maino, R., & Emrullahu, D. (2022). Climate Change in Sub-Saharan Africa Fragile States: Evidence from Panel Estimations. *IMF Working Papers*, 2022(054), 1.

- Mair, J., & Marti, I. (2006). Social Entrepreneurship Reserach: a Source of Explanation, Prediction and Delight. *SSRN Electronic Journal*, 41(1), 36–44.
- Malecki, E. J. (2018). Entrepreneurship and entrepreneurial ecosystems. *Geography Compass*, 12(3), e12359.
- Malone, T. W., Crowston, K., Lee, J., Pentland, B., Dellarocas, C., Wyner, G., Quimby, J., Osborn, C. S., Bernstein, A., Herman, G., Klein, M., & O'Donnell, E. (1999). Tools for Inventing Organizations: Toward a Handbook of Organizational Processes. *Management Science*, 45(3), 425–443.
- Manocha, P., Hunt, R. A., Townsend, D. M., & Stallkamp, M. (2021). When rising tides lift some boats more than others: Gender-based differences in the external enablement of entrepreneurship. *Journal of Developmental Entrepreneurship*, 26(03).
- Mason, C., & Brown, R. (2014). *ENTREPRENEURIAL ECOSYSTEMS AND GROWTH ORIENTED ENTREPRENEURSHIP Background paper prepared for the workshop organised by the OECD LEED Programme and the Dutch Ministry of Economic Affairs on. OECD.*
- Matsumoto, K. (2019). Climate change impacts on socioeconomic activities through labor productivity changes considering interactions between socioeconomic and climate systems. *Journal of Cleaner Production*, 216, 528–541.
- McGee, J. E., & Terry, R. P. (2022). COVID-19 as an external enabler: The role of entrepreneurial self-efficacy and entrepreneurial orientation. *Journal of Small Business Management*, 1–26.
- Müller, C., Waha, K., Bondeau, A., & Heinke, J. (2014). Hotspots of climate change impacts in sub-Saharan Africa and implications for adaptation and development. *Global Change Biology*, 20(8), 2505–2517.
- Muñoz, P., & Cohen, B. (2017). Sustainable Entrepreneurship Research: Taking Stock and looking ahead. *Business Strategy and the Environment*, 27(3), 300–322.
- Neumeyer, X., & Santos, S. C. (2018). Sustainable business models, venture typologies, and entrepreneurial ecosystems: A social network perspective. *Journal of Cleaner Production*, 172, 4565–4579.
- O'Connor, C., & Joffe, H. (2020). Intercoder reliability in qualitative research: Debates and practical guidelines. *International Journal of Qualitative Methods*, 19(1).
- Pankov, S., Velamuri, V. K., & Schneckenberg, D. (2019). Towards sustainable entrepreneurial ecosystems: examining the effect of contextual factors on sustainable

- entrepreneurial activities in the sharing economy. *Small Business Economics*, 56(3), 1073–1095.
- Parrish, B. D. (2010). Sustainability-driven entrepreneurship: Principles of organization design. *Journal of Business Venturing*, 25(5), 510–523.
- Patton, M. Q. (1990). *Qualitative Evaluation and Research Methods* (2nd ed.). Sage.
- Rigaud, K. K., de Sherbinin, A., Jones, B., Adamo, S., Maleki, D., Abu-Ata, N. E., Casals Fernandez, A. T., Arora, A., Chai-Onn, T., & Mills, B. (2021). *Groundswell Africa: Internal Climate Migration in West African Countries*. The World Bank.
- Ritchie, H., & Roser, M. (2019). Age Structure. *Our World in Data*.
- Sarason, Y., Dean, T., & Dillard, J. F. (2006). Entrepreneurship as the nexus of individual and opportunity: A structuration view. *Journal of Business Venturing*, 21(3), 286–305.
- Sarason, Y., Dillard, J. F., & Dean, T. (2010). How can we know the dancer from the dance? *Journal of Business Venturing*, 25(2), 238–243.
- Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research Methods for Business Students* (8th ed.). Pearson.
- Schade, P., & Schuhmacher, M. C. (2022). Digital infrastructure and entrepreneurial action-formation: A multilevel study. *Journal of Business Venturing*, 37(5), 106232.
- Schaefer, K., Corner, P. D., & Kearins, K. (2015). Social, Environmental and Sustainable Entrepreneurship Research. *Organization & Environment*, 28(4), 394–413.
- Schaltegger, S., & Wagner, M. (2011). Sustainable entrepreneurship and sustainability innovation: categories and interactions. *Business Strategy and the Environment*, 20(4), 222–237.
- Schumpeter, J. A. (1934). *The theory of economic development an inquiry into profits, capital, credit, interest, and the business cycle*. New Brunswick (U.S.A.) London (U.K.) Transaction Publishers.
- Selassie, A., & Fuje, H. (2021). *Seven Charts that Show Sub-Saharan Africa at a Crucial Point*. International Monetary Fund.
- Shane, S. (2012). Reflections on the 2010 AMR Decade Award: Delivering on the Promise of Entrepreneurship As a Field of Research. *Academy of Management Review*, 37(1), 10–20.
- Shane, S., & Venkataraman, S. (2000). The Promise of Entrepreneurship as a Field of Research. *The Academy of Management Review*, 25(1), 217–226.

- Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22(2), 63–75.
- Shepherd, D. A., & Patzelt, H. (2011). The New Field of Sustainable Entrepreneurship: Studying Entrepreneurial Action Linking “What Is to Be Sustained” With “What Is to Be Developed.” *Entrepreneurship Theory and Practice*, 35(1), 137–163.
- Signé, L. (2018a). *The potential of manufacturing and industrialization in Africa: Trends, opportunities, and strategies*. Brookings.
- Signé, L. (2018b). *Africa’s consumer market potential: Trends, drivers, opportunities, and strategies*. Brookings.
- Simatupang, T. M., Schwab, A., & Lantu, D. (2015). Introduction: Building Sustainable Entrepreneurship Ecosystems. *SSRN Electronic Journal*.
- Sine, W. D., & Lee, B. H. (2009). Tilting at Windmills? The Environmental Movement and the Emergence of the U.S. Wind Energy Sector. *Administrative Science Quarterly*, 54(1), 123–155.
- Sober, E. (2005). *Core Questions in Philosophy 4th ed.* Pearson/Prentice Hall.
- Spigel, B. (2017). The Relational Organization of Entrepreneurial Ecosystems. *Entrepreneurship Theory and Practice*, 41(1), 49–72.
- Stam, E. (2015). Entrepreneurial Ecosystems and Regional Policy: A Sympathetic Critique. *European Planning Studies*, 23(9), 1759–1769.
- Stam, E., & van de Ven, A. (2019). Entrepreneurial ecosystem elements. *Small Business Economics*, 56(2), 809–832.
- Statista. (2021). *Sub-Saharan Africa - total population 2008-2018*. Statista. <https://www.statista.com/statistics/805605/total-population-sub-saharan-africa/>
- Statista. (2023, April 28). *Africa: median age of the population 2000-2020*. Statista. <https://www.statista.com/statistics/1226158/median-age-of-the-population-of-africa/>
- Stebbins, R. A. (2001). *Exploratory research in the social sciences*. Sage Publications.
- Stubbs, W. (2016). Sustainable Entrepreneurship and B Corps. *Business Strategy and the Environment*, 26(3), 331–344.
- Taylor, G. W., & Ussher, J. M. (2001). Making Sense of S&M: A Discourse Analytic Account. *Sexualities*, 4(3), 293–314.

- The World Bank. (2020). *Poverty headcount ratio at \$2.15 a day (2017 PPP) (% of population) - Sub-Saharan Africa*. Data.worldbank.org.
<https://data.worldbank.org/indicator/SI.POV.DDAY?locations=ZG>
- The World Bank. (2022). *Unemployment, total (% of total labor force) (modeled ILO estimate) - Sub-Saharan Africa / Data*. Worldbank.org.
<https://data.worldbank.org/indicator/SL.UEM.TOTL.ZS?locations=ZG>
- The World Bank. (2023). *Africa Overview*. World Bank.
<https://www.worldbank.org/en/region/afr/overview>
- Theodoraki, C., Dana, L.-P., & Caputo, A. (2022). Building sustainable entrepreneurial ecosystems: A holistic approach. *Journal of Business Research*, *140*, 346–360.
- Theodoraki, C., Messeghem, K., & Rice, M. P. (2017). A social capital approach to the development of sustainable entrepreneurial ecosystems: an explorative study. *Small Business Economics*, *51*(1), 153–170.
- Thompson, N., Kiefer, K., & York, J. G. (2011). Distinctions not Dichotomies: Exploring Social, Sustainable, and Environmental Entrepreneurship. *Advances in Entrepreneurship, Firm Emergence and Growth*, *13*, 201–229.
- Turco, M., Palazzi, E., von Hardenberg, J., & Provenzale, A. (2015). Observed climate change hotspots. *Geophysical Research Letters*, *42*(9), 3521–3528.
- Uddin, M., Chand Hindu, R., Shah, A., Alsaqour, R., Abubakar, A., & Saba, T. (2015). Knowledge Management Framework using Green IT to Implement Sustainable Entrepreneur Ecosystem Knowledge Management Framework using Green IT to Implement Sustainable Entrepreneur Ecosystem. *Applied Mathematics & Information Sciences an International Journal*, *9*(5), 2703.
- UNDP. (2022). *2022 AFRICA SUSTAINABLE DEVELOPMENT REPORT | United Nations Development Programme*.
- UNFCCC. (2015). *Paris Agreement*.
- United Nations. (1987). *Report of the World Commission on Environment and Development: Our Common Future* (p. 16).
- United Nations. (1992). *UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE*. United Nations.
- United Nations. (1998). *Kyoto Protocol to the United Nations Framework Convention on Climate Change*.
- United Nations. (2015). *The 17 Sustainable Development Goals*. United Nations.

- Unreasonable. (2023). *The Unreasonable Fellowship*. Unreasonable Group.
<https://unreasonablegroup.com/fellowship>
- Viviane, C., Kumari, R., Kanta, Alex, de S., Bryan, J., Susana, A., Jacob, S., Nian, S., & Elham, S. (2021). Groundswell Part 2. *World Bank Group*.
- Volkman, C., Fichter, K., Klofsten, M., & Audretsch, D. B. (2019). Sustainable entrepreneurial ecosystems: an emerging field of research. *Small Business Economics*, 56(3), 1047–1055.
- von Briel, F., Davidsson, P., & Recker, J. (2017). Digital Technologies as External Enablers of New Venture Creation in the IT Hardware Sector. *Entrepreneurship Theory and Practice*, 42(1), 47–69.
- Warren, C. A. (2002). Qualitative interviewing. In *Handbook of interview research: Context and method*, (pp. 83–101). SAGE.
- Weber, K., Heinze, K. L., & DeSoucey, M. (2008). Forage for Thought: Mobilizing Codes in the Movement for Grass-fed Meat and Dairy Products. *Administrative Science Quarterly*, 53(3), 529–567.
- Welter, F., & Smallbone, D. (2010). Institutional Perspectives on Entrepreneurial Behavior in Challenging Environments. *Journal of Small Business Management*, 49(1), 107–125.
- Wood, M. S., Williams, D. W., & Drover, W. (2022). A theory of missed external enablement. *Strategic Entrepreneurship Journal*.
- Wurth, B., Stam, E., & Spigel, B. (2021). Toward an Entrepreneurial Ecosystem Research Program. *Entrepreneurship Theory and Practice*, 46(3), 729–778.
- Wynn, D. Jr., & Williams, C. K. (2012). Principles for Conducting Critical Realist Case Study Research in Information Systems. *MIS Quarterly*, 36(3), 787.
- Yang, Y., Chen, L., Jia, F., & Xu, Z. (2019). Complementarity of circular economy practices: an empirical analysis of Chinese manufacturers. *International Journal of Production Research*, 57(20), 6369–6384.
- Young, W., & Tilley, F. (2006). Can businesses move beyond efficiency? The shift toward effectiveness and equity in the corporate sustainability debate. *Business Strategy and the Environment*, 15(6), 402–415.

Appendices

Appendix A – GDPR consent form



JÖNKÖPING UNIVERSITY
Jönköping International
Business School

Participant Information Sheet

You are being invited to take part in a thesis study. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

What is the purpose of the study collecting personal data?

This MSc thesis is part of an accreditation for the researchers' degree. The duration of this project is from January until May. The researchers aim to capture how and why Sub-Saharan entrepreneurs respond to sustainability issues in the region. The interviews will contribute to this by providing the researchers' with data that can be analysed and generalized into noteworthy entrepreneurial constructs.

It is entirely up to you to decide whether or not to take part. If you decide to do so, you will be given this information sheet to keep and will be asked to give your consent. All the information that we collect about you during the course of the research will be kept strictly confidential. You will not be able to be identified in any ensuing reports or publications, unless you consent to forego anonymization.

Under GDPR you have the following rights over your personal data:

- **The right to be informed.** You must be informed if your personal data is being used.
- **The right of access.** You can ask for a copy of your data by making a 'subject access request'.
- **The right to rectification.** You can ask for your data held to be corrected.
- **The right to erasure.** You can ask for your data to be deleted.
- **The right to restrict processing.** You can limit the way an organisation uses your personal data if you are concerned about the accuracy of the data or how it is being used.
- **The right to data portability.** You have the right to get your personal data from an organisation in a way that is accessible and machine-readable. You also have the right to ask an organisation to transfer your data to another organisation.
- **The right to object.** You have the right to object to the use of your personal data in some circumstances. You have an absolute right to object to an organisation using your data for direct marketing.
- **How your data is processed using automated decision making and profiling.** You have the right not to be subject to a decision that is based solely on automated processing if the decision affects your legal rights or other equally important matters; to understand the reasons behind decisions made about you by automated processing and the possible consequences of the decisions, and to object to profiling in certain situations, including for direct marketing purposes.

You should also know that you may contact the data protection officer if you are unhappy about the way your data or your participation in this study are being treated at dpo@ju.se

Thank you for reading this information sheet and for considering whether to take part in this research study.

Appendix B – Interview Guide for Entrepreneurs

Background
<i>Cycle 1</i>
Can you tell us about your professional background, including your previous work experience? Can you tell us about your academic background? How have your personal experiences influenced your professional goals or aspirations?
<i>Cycle 2</i>
What is your venture about? Can you elaborate a bit on that What drove you to pursue this particular venture idea? Tell us a bit about your background (Professional/Academia/Personal) How have your personal experiences influenced your professional goals or aspirations? How do you think your culture shaped you as an entrepreneur?
Venture Recognition
<i>Cycle 1</i>
What is your venture about? Can you elaborate a bit on that What drove you to pursue this particular venture idea? Which external event helped you identify this opportunity How did your ecosystem support you with the venture creation? How do you support the ecosystem? Can you discuss any challenges or setbacks you faced and how you overcame them? Looking back on the process, what do you feel were the most important factors in your success as entrepreneur?
<i>Cycle 2</i>
At the beginning, do you think you were an entrepreneur by necessity or by choice? And why? How did your personal surrounding help you identify/realize this venture idea? Can you discuss any challenges or setbacks you faced and how you overcame them? How did your ecosystem support you with challenges /venture development? What do you feel were the most important factors in your success as an entrepreneur?
Sustainable Entrepreneurship
<i>Cycle 1</i>
What inspired you to become environmentally/socially active? What are the current goals of the company? Can you divide them into social/environmental/and economic? What were social /environmental and economic accomplishments in your venture? What are challenges you are currently facing? SDGs: Are you aware of the SDGs? Does your venture address the United Nations' Sustainable Development Goals (SDGs)? How does your venture address these goals?
<i>Cycle 2</i>
What inspired you to become environmentally/socially active? Did either environmental or social entrepreneurship come before the other? environmental What are the current goals of the company? social/environmental/and economic? What were social /environmental and economic accomplishments in your venture? What are challenges you are currently facing? How is your community involved in your sustainable actions?
External Environment
<i>Cycle 1</i>
How does your external environment influence you, or your business in pursuing business opportunities?

<p>In your experience, how have outside factors influenced the success or failure of new ventures in your industry?</p> <p>Could you describe some of the institutional (Economic/Political/Societal) influences that entrepreneurs face when starting a new venture? How do they support/ hinder the growth of ventures?</p> <p>How do you think social norms and regulations impact the entrepreneurial ecosystem in your region?</p> <p>Do you think that the institutional environment for sustainable entrepreneurship is becoming more or less favorable in your industry or region? Why do you think that is?</p> <p>What strategies have you used to handle obstacles/challenges related to your external environment?</p>
<i>Cycle 2</i>
<p>How has the institutional environment shaped your ability identify and act on business opportunities?</p> <p>How has it challenged or supported the ability to embed sustainability in your venture?</p> <p>How do you think social norms and regulations impact the entrepreneurial ecosystem in your region?</p> <p>In your experience, do you think the institutional environment creates a degree of uncertainty for your venture? How so?</p> <p>What strategies have you used to handle obstacles/challenges related to your external environment?</p> <p>Do you think that the institutional environment for sustainable entrepreneurship is becoming more or less favorable in your industry or region? Why do you think that is?</p>

Appendix C – Interview Guide for Researchers

Background
<p>Can you tell us about your about yourself ? How does your research area relates to entrepreneurship in Sub-Saharan Africa?</p> <p>Entrepreneurial Ecosystems</p> <p>How would you define and conceptualize the entrepreneurial ecosystem in Sub-Saharan Africa?</p> <p>Can you discuss any challenges or setbacks that entrepreneurs in Sub-Saharan Africa typically face, and how they navigate them?</p> <p>How does the entrepreneurial ecosystem in Sub-Saharan Africa differ from those in other regions, and what factors contribute to these differences?</p>
Sustainable Entrepreneurship
<p>How does sustainability factor into entrepreneurship in Sub-Saharan Africa, and what are the most common forms of sustainable entrepreneurship in the region?</p> <p>How do social and environmental factors intersect with entrepreneurship in Sub-Saharan Africa, and what role do they play in shaping sustainable entrepreneurship?</p>
External Environment
<p>How do institutional factors, such as government policies and regulations, impact the entrepreneurial ecosystem in Sub-Saharan Africa?</p> <p>How does the structural system of Sub-Saharan Africa foster the incubation of sustainable entrepreneurs?</p> <p>In your experience, how do social norms and cultural values impact? entrepreneurship in Sub-Saharan Africa, and how do they affect the adoption of sustainable practices?</p>

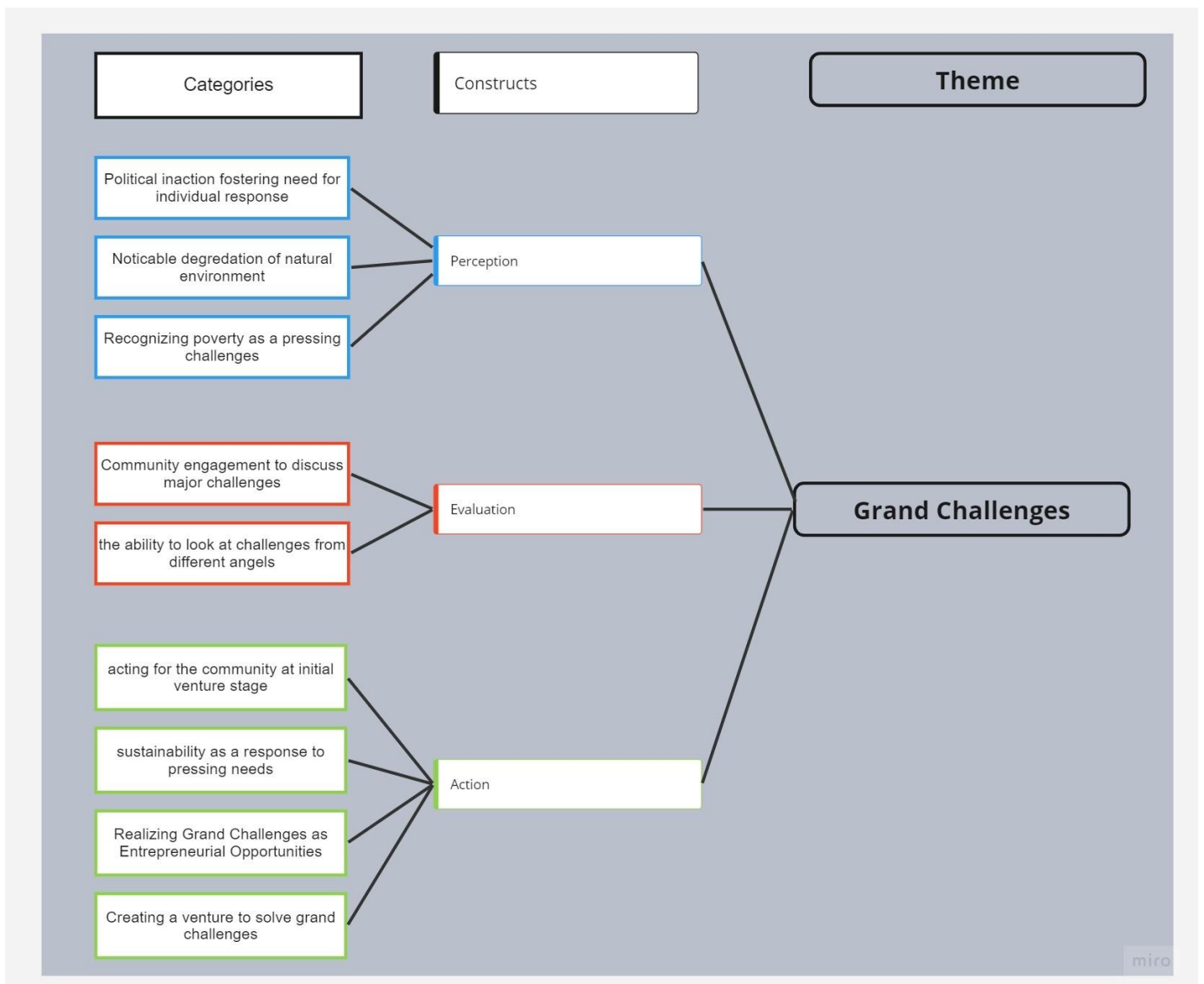
What are some of the major challenges facing sustainable entrepreneurship in Sub-Saharan Africa, and how can they be addressed?

Do you think the institutional environment for sustainable entrepreneurs is favorable in Sub-Saharan Africa?

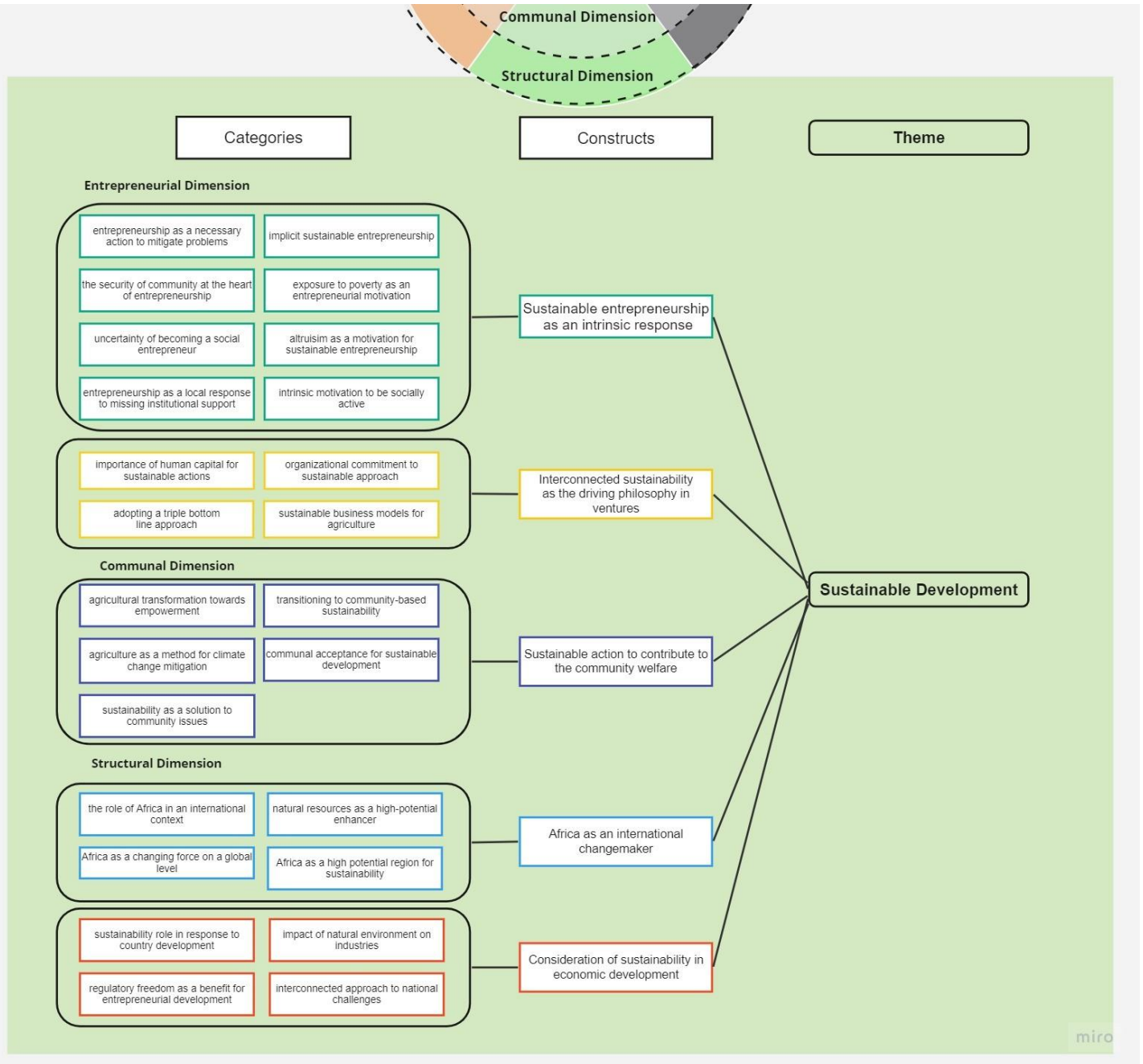
Finally, in your opinion, what steps can be taken to create a more favorable institutional environment for sustainable entrepreneurship in Sub-Saharan Africa?

Appendix D – Coding Structure

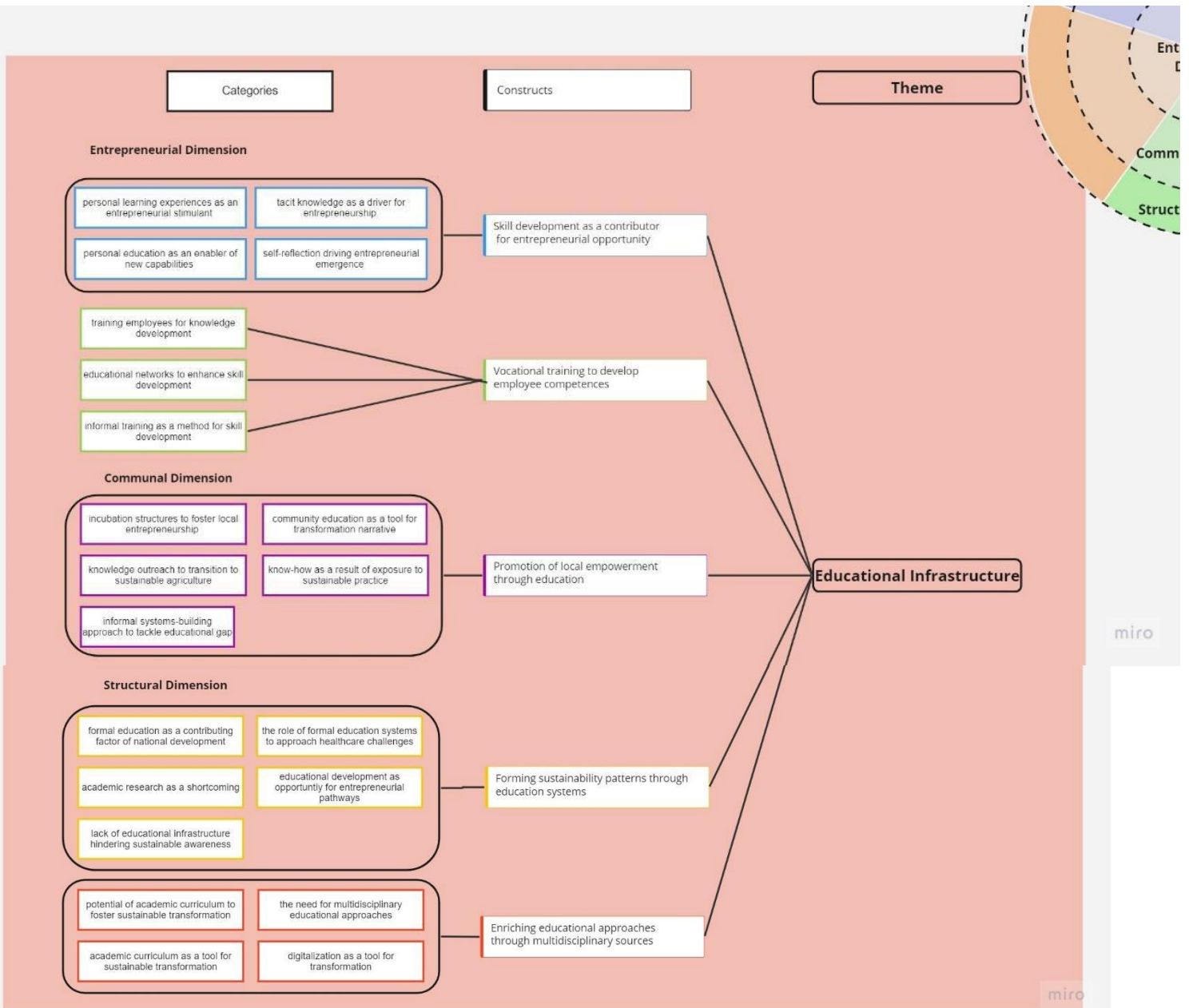
1. Grand Challenges



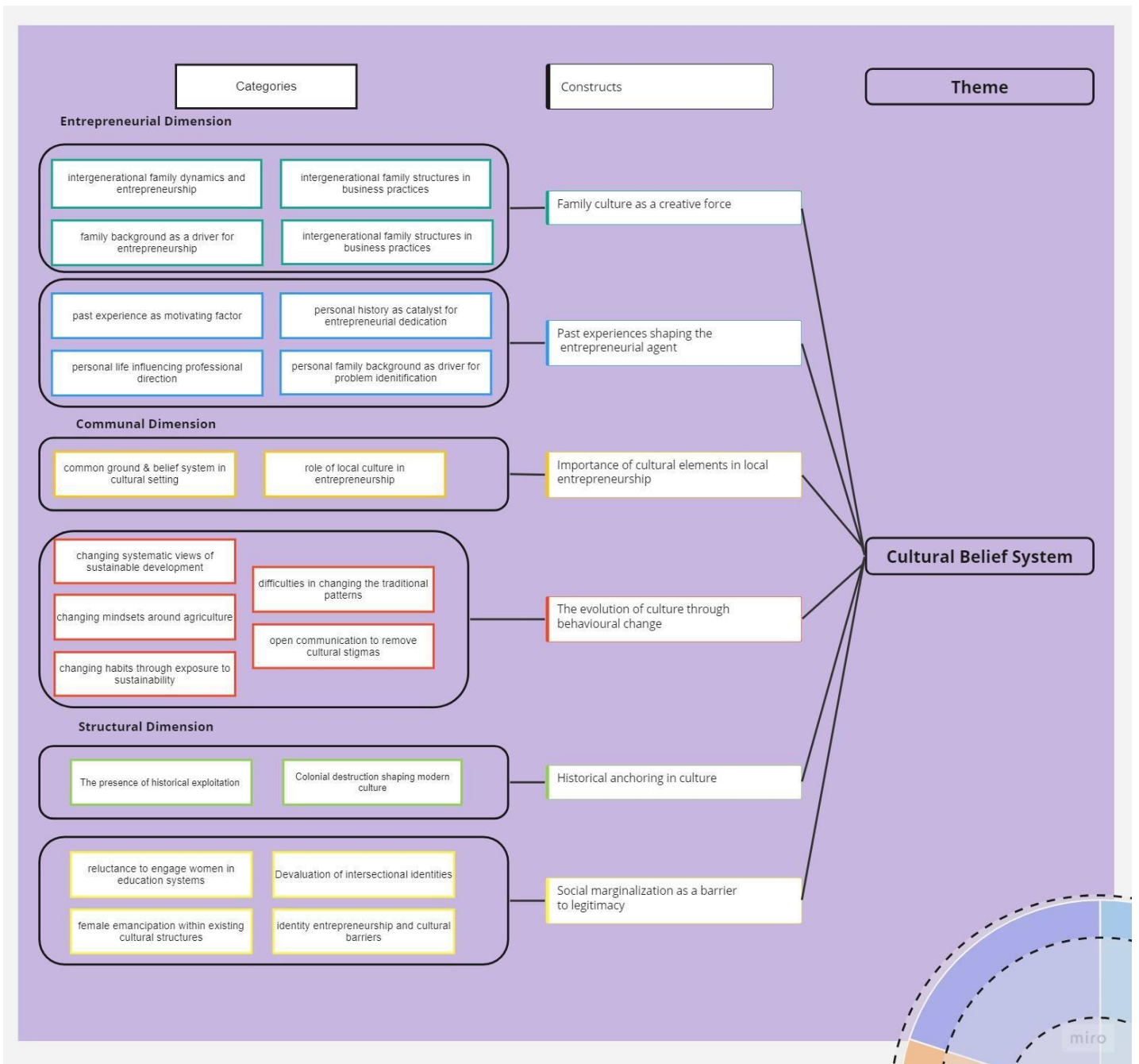
2. Sustainable Development



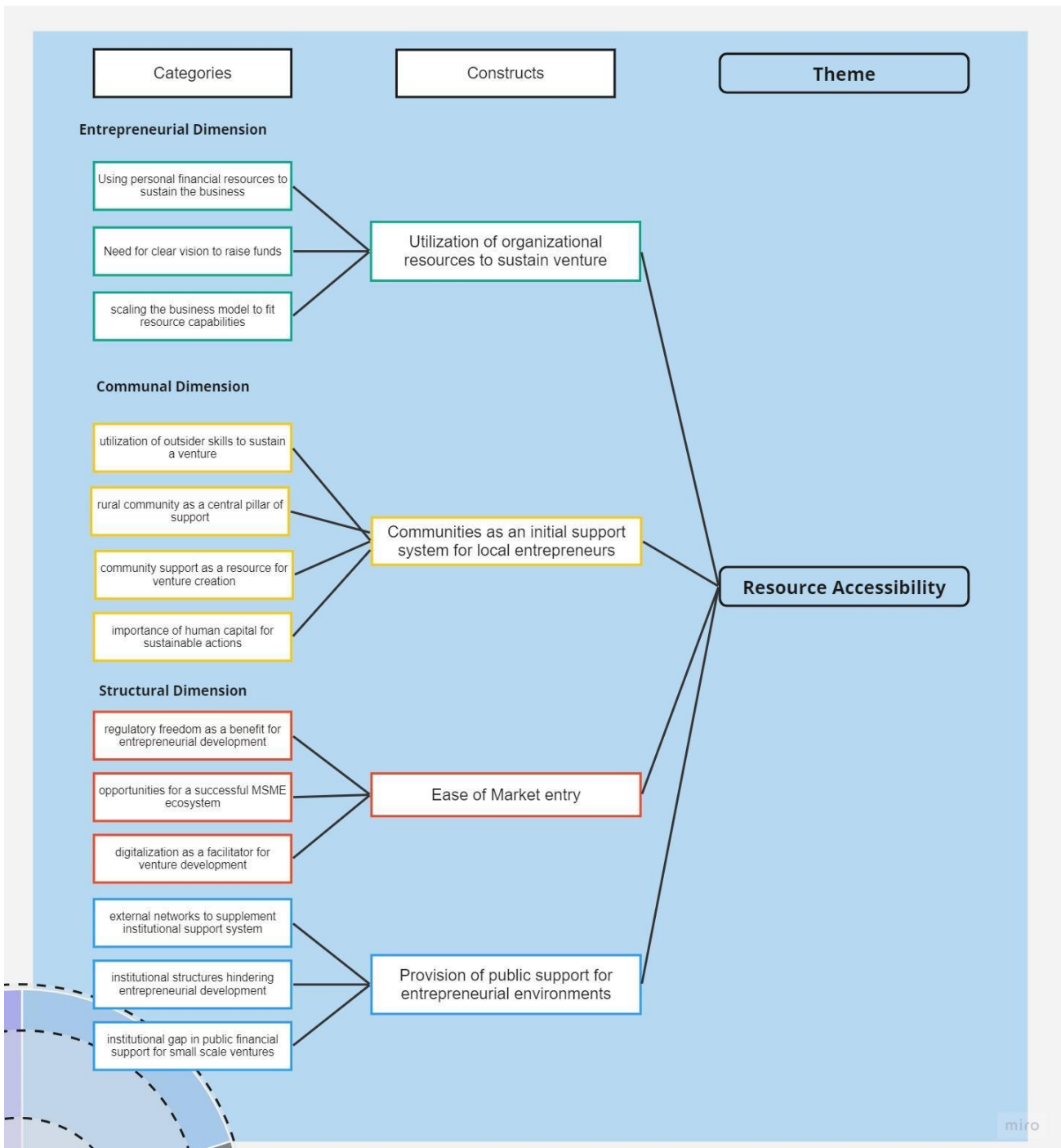
3. Educational Infrastructure Cultural Belief Systems



4. Cultural Belief Systems



5. Resource Accessibility



6. Governance

